

Fundamentals

of

Normative Economics

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Synopsis

Mankind is collapsing. We are living in a global society where there are homeless people, where there are individuals wasting resources while others are living in hunger, and where violence is an everyday reality. Humans are dangerous to themselves and society does not care for all its children. What is wrong with us?

This book follows the work I have developed throughout my life which is exposed at matein7.com. With my equations, I will show you what pushes us to do what we do not want and why we keep doing things against our nature. It explains why firms are too big, and too small, but rarely of optimum size. It shows why our monetary system is absurd. It elucidates why humans opt to resort to violence to solve economic issues. It enlightens how changes in the regulatory systems can improve overall welfare.

This work encompasses the theoretical concepts consolidated by research and their practical application, which we desperately need. It enhances the economist's ability to translate knowledge into know-how.

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(2)	$v(x) = \begin{cases} x^\alpha & \text{if } x \geq 0 \\ -\lambda(-x)^\beta & \text{if } x < 0 \end{cases}$	29
(3)	utility = f(consumption, leisure)	32
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(7)	$MV = \sum p_i q_i$	73
(8)	$MV = PT$	73
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(15)	$e^* = [(1 - \tau) A / 2]^2$	100
(16)	$Q_w = Be^{1/2}$	101
(17)	$\max U'(c, l) = c + l = Be^{1/2} + \bar{e} - e$ subject to $(\bar{e} - e) \geq 0$	101
(18)	$\max U'(c, l) = c + l = (1 - \beta) Be^{1/2} + \bar{e} - e$ subject to $(\bar{e} - e) \geq 0$	101
(19)	$e'^* = [(1 - \beta) B / 2]^2$	101
(20)	$(1 - \tau) A = (1 - \beta) B$	102
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0- Preamble

In 1999, when Antonio Guterres was Portugal's Prime Minister, the government enacted a law stating that every serious work accident was going to be supervised by a state entity. Starting in 2000, the first of January, any compensation paid by the insurance companies for serious work accidents would surely obey what was legally defined. At the time, the labor law had been untouched during the prior 35 years. Until then, despite the law specifying the compensations that labor-injured people were entitled to, the insurance companies were proposing a compensation agreement that people used to accept because they did not know the law. The government stated that, for the insurance companies, it was going to be mandatory to announce every serious labor accident to a governmental labor entity so that the state institution could monitor the settlement of the claim. This measure's result was an industry-unanimous 33% price increase in the labor insurance contract! That is, before the supervision of an entity that was going to act only as a referee, and just to make sure all parties behaved properly and under legal compliance, the insurance companies were paying compensations to the injured person at will. When the government said the law was to be obeyed, their response was a price increase of one-third. The insurance companies were deceiving the injured persons by compensating them less than they legally should while being well aware of what they were doing. For the record, the insurance companies justified their sudden huge price increase with an alleged extra-risk imposed by the law; but that was purely not true.

The human decision-making process depends on the collective rules we choose to abide by and on the individual responses that each person happens to provide before a given circumstance. Sometimes, as just illustrated above, individual behavior leads to a regulatory change. Some other times, as happened during the pandemic period, rules are enforced to compel human behavior into a given path. It is impossible to understand an economy while disregarding the pressures exerted by the institutional environment on society members.

The reasons why humanity is falling apart are not intuitively perceived by the human eye. In society, individual interactions follow individual interests and their full collective outcome often overcomes our reasoning boundaries. Mankind is cognizant of the usefulness of safeguarding property rights to secure overall welfare. Mankind is also aware of the importance of private initiative and individual autonomy to consolidate economic development. This awareness comes out empirically from the regular human interactions, but they take place under the applied regulatory systems. The reasons why humans still cheat, steal, and deceive each other go far beyond the moral scope to reach the frame of a survival necessity. To objectively understand how individual human behavior occurs and combines is, therefore, paramount.

Who sets the rules of the game throughout the global economic field? What kind of behavior are the rules actively fostering? How are these rules and regulations truly working out? What is the contribution of these rules to the cause-consequence effects regarding any negative events such as economic crises, poverty increases, consistent underdevelopment, and the growing rich-poor inequality gap?

The government has a very important role in setting up a healthy economy, albeit always depending on society's overall behavior. The government has the power to create part of the institutions that foster positive opportunistic behavior. Moreover, the government has the power to put this sort of theme into the social and political agenda. Finally, it is up to the government the responsibility of developing a fruitful social dialogue to reach the desirable overall welfare improvement. However, the government, which may set some of the rules of the economic game, has been consistently

powerless to preclude economic crises from happening. The ordinary citizen usually believes that he or she does not have the power to make a change. But if the government is powerless to prevent economic crises and there is nothing an ordinary citizen really can do, then what is our global society doomed to?

Mankind is collapsing under our current regulatory system for the rules we are accepting to abide by are consistently spurring the perpetuation of cheating, stealing, and deceiving behaviors for survival reasons. Mankind is falling apart for the way to pull the hand break and stop the nonsense we are engaged in cannot be easily understood. Moreover, it cannot be done by any government alone.

The crucial role of Normative Economics in the human decision-making process comprehends both practical and theoretical effects that severely impact overall welfare. At the practical level, its knowledge enhances corporations raising their inner regulatory systems under an enabling methodology that boosts productivity and creates room for the deployment of faster and adequate responses to environmental changes. This practicality spreads to the remaining society and produces several macroeconomic dynamics that cannot be disregarded. At the theoretical level, setting up the scope for individuals to detect and take opportunities, provides a significant focus of interest and exploration opportunity. The understanding of its ample influence in defining the production of economic data constitutes the cornerstone upon which Microeconomics and Macroeconomics pursue their development. However, the importance of the essential regulatory bases for optimizing economic and social development is still misunderstood, and its knowledge is not producing an effective outcome toward overall welfare improvement.

Therefore, and mainly, this work targets the graduated economist who aims at propelling their productivity, either teaching Economics or applying this knowledge at any other professional level encompassing entrepreneurship or politics. Chiefly, it focuses on the regulatory system that maximizes productivity and overall welfare in human society, encompassing micro and macro interests. Understanding the fundamentals of Normative Economics is useful to every professional activity where the person in charge can deliver a significant and positive change by setting up the regulatory playfield upon which others fully depend. Overall, this work is important to everyone who wants to understand how and why the regulatory systems sometimes produce enabling effects, fostering individual freedom and improving overall welfare, while some other times get perverse effects, even contrary to the good that was first targeted by the legislator. Ultimately, if successful, this work will trigger the peaceful revolution our global society needs so much.

1- Introduction

Rules must be questioned. If raised in good faith, for the benefit of the entire human organization, the enactment of any regulation occurs when facing a given circumstance and to provide an answer to a specific necessity. But circumstances change and the regulatory system that was once adequate might become obsolete and even counter-productive. Furthermore, rather than safeguarding society's overall welfare, rules and regulations might be raised to perpetuate chains of power that enable a fraction of society to trample another. Hence, to secure overall welfare, it is mandatory to continuously monitor the regulatory systems we are accepting to abide by.

Economics refers to the systematic study of human and material interactions to deliver the highest possible overall welfare. The study of the economy is split into four intertwined branches, each encompassing its idiosyncrasies, and each embracing its complexities. These are Microeconomics, Macroeconomics, Positive Economics, and Normative Economics. Microeconomics studies the individual behavior that occurs within a given regulatory framework. Macroeconomics addresses how individual behaviors combine to produce a given collective outcome. Positive Economics identifies and explains how economic events happen regardless of society's awareness of its contribution to overall welfare. Finally, Normative Economics studies the essential regulatory bases to consistently improve and safeguard society's overall welfare. Understanding the fundamentals of Normative Economics enables the economist to make a difference.

Economic behavior is directly related to the concept of opportunity. The availability of human and material resources is perceived based on several criteria such as persons, location, natural conditions, material features, infrastructures, social rules, legal framework, and many other things that set up a panoply of circumstances perceived differently by each person. When the person perceiving the circumstance holds executive power to act upon it, the opportunity to improve the individual's welfare materializes in the production of an action with consequences for everybody. Hence, it is impossible to understand the economy while disregarding how an opportunity is created, stimulated, inhibited, taken, or lost.

Economic consequences arise from individual deeds regardless of the eventual existence of human interactions, for overall welfare changes upon it. Individual activity is directed toward the search for "value," while the concept of value claims a clear definition. Microeconomics considers that the economic agents, whether a person, a family, a government, or an enterprise, are all trying to maximize their utility, which is, therefore, the measure of the "value" that is being sought. For the enterprise, "value" used to be measured in profits. For individuals and families, "value" used to be measured by their ability to both consume and enjoy leisure time. For the government, "value" is usually aimed to be measured by the improvement of overall "welfare" that it is able to deliver to society. It is either impossible to dissociate the actions that individuals engage in from their consequences to society or to disregard the conditions upon which human activity takes place. Hence, one pertinent question the economist needs to provide an answer is: How does the human quest for "value" relate to "welfare" consolidation?

Being aware of the rules and regulations that set up the boundaries of human activity becomes crucial to ensure overall welfare improvement. Since individuals are unique, people do not detect opportunities simultaneously, nor do circumstances apply equally to everyone. To foster overall welfare, the economist must be aware of the circumstances the institutional environment delivers to the population, enabling or disabling a given course of action. Moreover, the economist must fully understand why a given course of action is desired or undesired, and what circumstances

consolidate the “adequate” behavior. In this sense “adequate” behavior is the one that contributes positively to the goal of overall welfare improvement.

The human society can depend on a disparate set of rules to reach a similar goal. For instance, we can communicate with each other by resorting to different types of languages and material supports. Generally speaking, it is not the rule in itself that matters but rather whether the set of rules that are being adopted enables the society to reach its goal with the minimum possible effort. Accordingly, the economist needs to identify the main rules we can depend upon and, under a non-biased mode, explain why some are effective, some are efficient, and some must be discarded. Therefore, the goal to be reached becomes the lighthouse the economist sails to.

If the economist considers that “value” is society’s main goal then the way “value” is pursued becomes a relevant unit of analysis too. This line of reasoning claims the understanding of both individual capacities and individual propensities that lead the human being to adopt a given course of action and is separate from the forces exerted by the institutional environment upon the society members. Being cognizant of the economic game we play regardless of the rules we choose to abide by is, therefore, another pillar that grounds the economist’s effectiveness.

The contribution of Normative Economics to safeguard overall welfare is determinant to combine the understanding of “who we are” with “what we do.” By this token, an inner awareness of who we are as individual living beings is combined with understanding what we do to bring “value” to our lives in our everyday effort to improve. The core of Normative Economics is to set up a methodology for developing and adjusting the rules and regulations that foster consistent overall welfare.

This work condenses the basis from which the economist can evolve regarding the theoretical development of Normative Economics and the practical appliance of its knowledge in corporations and governmental decisions. It is conceived under many guidelines. First, the concept of “opportunity” is addressed to provide a solid understanding of the scope that a society provides for the development of human strategic behavior. Second, the concept of “value” is dissected in its most prominent constituents to provide a deep understanding of the disparate effects of gains and losses on human behavior. Third, the economic consequences of given psychological and sociological propensities are explained while highlighting their power to define legitimated courses of action. Fourth, it stands out how using money to facilitate transactions becomes a game-changer factor in solidifying overall welfare in a society. Fifth, it provides a wide analysis of the causes of market imbalances and what that means to every human being’s welfare. Sixth, it presents the mathematical expression of the equations that raise an enabling institutional environment that consistently fosters overall welfare while setting up a methodology for the continuous development and adjustment of the regulatory system. Seventh, it identifies several future implications of using Normative Economics guidelines, which extend from the theoretical scope of the academic realm to reach the domain of the corporations’ decision-making process and the practical use of Artificial Intelligence. Eighth, it is explained how and why violence consolidates among humans. Finally, since this work disrupts the *status quo*, a discussion of the disclosed ideas is presented and a brief conclusion is woven.

2- Opportunity

Opportunity can be defined as a novel situation that brings benefits. Hence, by taking an opportunity the individual aims at fulfilling a very specific goal of self welfare improvement. The understanding of human behavior, individually or collectively, cannot be dissociated from a solid awareness of the goals being pursued when someone takes an opportunity. Furthermore, the scope and range of opportunities delivered by the environment induce individuals to engage in a given course of action to reach their purposes, making it crucial to realize if the best strategies to be successful are the ones being chosen. To the economist, this concept is of primordial importance and is the most basic unit of analysis.

The increasing cognizance of the determinants of an opportunity enables the social sciences to develop solid theoretical models of good and bad practices. A sound example comes from the world of entrepreneurship where a start-up must understand the circumstances presented by its target market and define an action plan to exploit the situation. In the last fifty years, an immense spring of bibliography regarding managerial practices, techniques, and guidelines has been published to raise entrepreneurs' ability to increase profitability in their businesses. A more specific example in the same realm regards the pursuit of efficiency in human resources management. Examples are countless, whether they come from the business domain or not, but summed up to simply identifying the best practices that enable the economic agent to reach a goal with the least possible effort and the highest possible safety.

The continuous development of the best practices to reach a given goal is mandatory because of human-bounded rationality. It is irrefutable that our reasoning ability is bounded and our human brain's capacity to deal with huge amounts of information is quite narrow. Accordingly, more often than not, humans make mistakes while trying to set up their strategies. Moreover, more often than not, action plans that seem to be accurate and doable in the first place are rarely second to none. Hence, humans make mistakes. Errors in the sense that we often choose to engage in a given course of action that is not the best to reach our self-interested goal. And mistakes differ from person to person.

The heterogeneity that humans exhibit among themselves impacts their decision-making process. People differ in multiple aspects such as physical attributes, know-how, networking, past experiences, and so many others. These differences lead each person to perceive the surroundings in a very specific way, that is often not shared with someone else. Accordingly, because circumstances are not equally perceived by two individuals, not every human acts similarly when in the same situation. Opportunities are not uniformly taken.

This introductory reflection on the concept of opportunity enables us to draw two important conclusions.

First, an opportunity that is taken always has meaningful consequences for society. On one hand, if the economic agent can reach the target goal then the person perceives that an individual welfare improvement is happening. On the other hand, if the goal is reached without regard to the least possible effort and risk, then resources, rather than being optimized are being wasted, and it is possible to reach higher levels of welfare but society is not aware of it.

Second, when we reason on the goal to be reached combined with the action plan that comprehends the least possible efforts and risk, we consider efficiency criteria that are very specific, unanimous and escape from subjective thoughts. Hence, understanding the concept of an opportunity is crucial

to the overall welfare, and, once one understands why, identifying good and bad practices does not vary depending on each person's opinion.

The conceptualization of an “opportunity” leads us to realize that everything we do is opportunistic behavior. That is, everything we do has a purpose and does not have any positive or negative connotation in itself. Only comparing the initial goal and the arrived outcome enables one to classify the actions made as good or bad. Once again, we are under a very objective and precise conclusion of what is good and what is not. However, everything we do has consequences for the remaining members of our society. Since individuals opt for a course of action focused on their self-interest or specific goals, which often do not consider the interests of the remaining members of the society and, sometimes, even lead to worsening the welfare of somebody else, opportunistic behavior is often connoted to a negative sense. Nonetheless, there are many situations in our daily life where opportunities are taken to improve individual welfare and the remaining members of society end up better. A simple example is what happens when a start-up is successful. Consequently, if and how an opportunity is taken is crucial to understanding the society's level of welfare.

Under the goal of improving overall welfare, opportunistic behavior can, therefore, be classified as positive or negative. Positive opportunistic behavior happens when the individual acts to improve self-welfare while being aware that his or her well-being further improves if the remaining members of society act the same way. Examples are producing goods and services and avoiding pollution. Negative opportunistic behavior occurs when someone acts to improve self-welfare while this same person's welfare decreases if the remaining members of society act alike, such as stealing or bribing. The pace of economic development is defined by the aggregated opportunistic behavior that occurs in society.

Human behavior is grounded on the perception of the surrounding circumstances and the use of individual creativity to combine the available resources into disparate ways of leading the person to feel better. It is, therefore, plain that two inner conditions determine the scope for identifying opportunities for welfare improvement: first, the environmental conditions where society evolves; and second, the individual characteristics of the person subjected to the decision-making process. Accordingly, understanding what motivates each member of society and the individual's perception regarding his or her understanding of what can do is crucial, for these are the general determinants of how society takes advantage of the available opportunities.

Focusing on the “opportunity” concept opens up a wide range of theoretical and practical applications due to its impact on overall welfare. What a person perceives that he or she can do to improve self-well-being is directly related to, at least, the following items under evaluation: 1) the institutional conditions – such as legal framework, law enforcement, or social pressures to behave in a given way; 2) the available material resources; and 3) the person's know-how that enable the creation of a strategy and the deployment of an action plan. Hence, at the theoretical level, studying these conditions increases the number of opportunities available in society. Moreover, desirably, this study will enable us to identify the best practices to reach a given goal. Specifically, Normative Economics focuses on the rules and regulatory systems that produce positive opportunistic behaviors while inhibiting negative opportunistic behaviors. Normative Economics is, thereby, a very concrete base stone upon which Microeconomics and Macroeconomics depend.

The mathematical expression of an opportunity results from the dependence of the person's decision-making process on the individual perception of the circumstances and the held executive power to act upon that perception. Without executive power to materialize the perception of the

circumstances into a consequential stream of actions that leads to a change in the person's well-being, the perception does not mean much to anybody. Accordingly, we can express "opportunity" as a function of both the perception of the available circumstances and the capacity to translate ideas into actions. Hence, we write:

$$\text{opportunity} = f(\text{circumstances}, \text{executive power}) \quad (1)$$

The mathematical expression of the opportunity concept solidifies the notion that both circumstances and executive power vary from person to person and the way opportunities are created, stimulated, inhibited, taken, or lost is something that the whole society is responsible for. Hence, to raise an enabling and fruitful institutional environment that induces positive opportunistic behavior to thrive, it is necessary to understand how environmental conditions combine with the uniqueness brought by each member of society.

Norms, rules, and regulatory systems constitute the support upon which the legislator defines the scope of human behavior in society. What "can be done" and what "cannot be done" are usually decided by the legislator aiming at contributing to overall welfare improvement. Furthermore, the enactment of rules upon what "cannot be done" is dominant and their effectiveness is usually closely connected to the analysis of law enforcement. Opportunities can be inhibited, and are inhibited by the regulatory system, while the individual behavior adjusts accordingly. Hence, well beyond the scope of the person holding the know-how to do something, the macroeconomic effects in an economy severely depend upon the regulatory systems that people are forced, or induced, to abide by.

Due to its mandatory contribution to opportunity-taking activities, freedom acquires a significant and profound importance for economic development. It is through being able to act upon their perceptions that people can do something to improve their well-being. However, due to the dualism inherent to opportunistic behavior, where society is quite aware of both the good brought by positive opportunistic behavior and the peril raised by negative opportunistic behavior, the legislator ends up with some compromise between what is chosen to be allowed to do and what is not. It is impossible to analyze how a society takes advantage of the available opportunities without paying close attention and making a detailed analysis of the freedom granted to society's members by its regulatory systems.

Once again, it becomes plain that the role of the legislator in setting up society's economic playfield is crucial. In 1999, Paul S. Adler (p. 38) proposed that the more familiar type of bureaucracy "*serves the purpose of coercion and compliance.*" This regulatory propensity makes sense for it is usually accepted that we can act at will unless someone tells us not to do it. Society is aiming at preventing negative opportunistic behavior. The author also outlines that there is a second type of bureaucracy that serves the purpose of "*enablement,*" where "*bureaucratic structures and systems function to support the work of the doers rather than to bolster the authority of the higher-ups*" and "*the increased formalization of the work roles tends to increase satisfaction and commitment*" across the workforce. This second type of regulatory system boosts positive opportunistic behavior by providing freedom to do so.

The legislator's goal while trying to channel human behavior becomes another factor of analysis for it impacts how freedom is granted through society's opportunity-granting process. Moreover, the legislator's effectiveness in channeling human behavior into a positive mode depends on how uniformly the norms, rules, or regulations are put into practice by the whole society.

For instance, imagine the functioning of an administrative department in an enterprise. This department has a person in command and this person tells his or her subordinates that the files must be archived in such a way that “we all know where things are at all times.” If the person in charge – the legislator – does not set up a homogeneous regulatory system applicable to reach this goal then, unavoidably, each person will develop their way of organizing the information for which he or she is accountable. Each subordinate will try to correspond to the legislator’s demand but the firm will face difficulties in finding a given file if the person who is usually dealing with it is temporarily away from the job. In situations such as this one, if the legislator asks any subordinate if everything is properly organized and it is possible to identify where things are, they all reply with a sound “yes.” However, if the legislator asks someone to find a file that is under another person’s charge the task likely presents significant hardships. In this example, a good file setup enables any person on the team to reach the goal of “we all know where things are at all times.” Hence, the way of doing things becomes a team goal and cannot be left alone to personal decisions. It becomes a collective responsibility.

Under the guideline of the goal to be reached, the legislator must decide some standard procedures that lead the actions of all team members. For instance, the legislator might identify that the department deals with actions “A,” “B,” “C,” and “D” and decide that it is desirable to have a clear separation of these subjects. Moreover, the legislator might define that processes must be sorted by customers’ last names and filed alphabetically. These instructions target the team’s goal of getting everyone to know where things are at all times. Regardless of the team’s person dealing with a specific customer, each team member is now able to expeditiously find the customer’s file and solve any situation. Bringing uniformity into the team’s procedures avoids embarrassing situations in the absence of any team member and enables the department to increase its productivity. Therefore, personal freedom knows its boundaries when collective interests are at stake.

When the norms, rules, and regulations do not enable any member of society to reach the collective goal that was being targeted, then the regulatory system needs assistance. This is a precise analysis that has nothing to do with subjective connotations. Furthermore, recognizing that we are not reaching our goal by complying with our current regulatory system might even mean that the goal cannot be reached. Hence, it is of the general collective interest of any society, corporation, or team workforce to identify if there is an “opportunity” to act toward the fulfillment of a very specific, shared, and aimed goal. If so, then it is in the general collective interest of society to raise a uniformly understood regulatory system that serves the collective purpose to be reached.

The example given above elucidates what can be negative opportunistic behavior, positive opportunistic behavior, and the cost inherent to losing an opportunity.

Negative opportunistic behavior is defined as the action perpetrated to improve self-welfare while the person’s well-being diminishes if everybody else acts alike. Imagine that the legislator of the example above defines the goal to be reached while letting his or her subordinates define their procedures at will, regardless of what the remaining members of the team are doing. Imagine that one of the subordinates decides to simply put all the files that he or she is accountable for in a big box, putting together all the situations, and without paying attention to any kind of sorting standard. This person does not care much about the time lost when trying to find a file, for he or she knows that all files are in that box and does not want to lose any second to follow a specific methodology archiving a file inside the box. In these cases, both the legislator and the subordinate engage in negative opportunistic behavior for they have just avoided doing their job with a little more engagement and discipline. In this last situation, when someone needs to find a customer’s file that might matter on subjects “A” and “D,” and the employee does not know who is the person in charge

of that file, how is the department ensuring that the file is found as soon as possible? Furthermore, how is the department ensuring that this customer's file has already been created anyway? What will be the overall future consequences for the entire department, or the firm, due to operating in such a way? Ultimately, what will be the future consequences for each team member?

On the other hand, positive opportunistic behavior is defined as the actions perpetrated by someone to improve self-welfare while the person's well-being increases if the remaining members of society act similarly. Now, let us consider that the legislator of the above example informs the goal to be reached and states the standard procedures that are equally performed by all team members. Furthermore, being aware of the legislator guidelines and goal to be reached, a person suggests that the department needs to set up an archive where each new customer is assigned to a member of the team. The procedure aims at enabling any person on the team to quickly identify where is the customer's file located, for everyone will be looking for the file immediately once identifying the team member in charge of that specific customer, regardless of the employee's presence on the job, and with no need to ask the customer about who is usually taking care of his or her case. Furthermore, this procedure will prevent the peril of doubling a given customer's file. This department has a leadership that includes every member in the decision-making process and extols their members' full participation. The effectiveness of this department in reaching the same goal will be superior to the one that engages in negative opportunistic behavior. When someone has several alternatives to reach a given goal and, consciously or not, opts for the one that is not the best available to achieve it, then the difference between the welfare that is attained compared with the one that is possible to get is a cost that the person is bearing. Consequently, society only thrives when positive opportunistic behavior takes the lead.

The cost of an opportunity is a concept usually taught at the beginning of any Economics course. One of its easiest illustrations is the example of a person who wishes to save some money in a one-year bank term deposit. Let us consider that this person has two available banks: bank "A" offering a 2% interest rate; and, bank "B" offering a 3% interest rate. If the person opts for the bank "A" offer, then the person is losing the opportunity of getting his or her money in a one-year term deposit at a higher interest rate. The person is losing a 1% interest rate for one year. While this constitutes a personal example, the same reasoning applies when opportunities are being guided by a collective interest. The cost of losing an opportunity is often quite measurable and always very significant to society's welfare.

Retrieving the mathematical expression of an "opportunity," it remains clear that both "circumstances" and "executive power" apply differently to each society member. "Circumstances" encompass a wide fan of material and immaterial considerations, comprehending tools, infrastructures, and raw materials, as well as information, know-how, and personal talents. "Executive power," in turn, is usually unevenly distributed across society. This means that, under the same circumstances, people might identify the best way to reach the collective goal but are unable to put it into practice at a global scope. In the above example, if the person in charge of the firm's department does not carefully listen to their subordinates' suggestions while relating them to the goal to be reached, then improvement opportunities will be lost, and the effectiveness of the department will be easily under scrutiny. When "executive power" is not as widespread as possible, opportunities are being missed in society, and that causes huge losses in overall welfare.

The analysis of the variable "executive power" enables the economist to identify the symptoms of a sick economy. There are only four possible situations where the activity of a person is under analysis. These are: 1) the person wants to do something and can do it; 2) the person does not want to do a given action and cannot do it, for he or she is truly unable to perform the task; 3) the person

wants to do something but is not allowed to do it by the regulatory system, regardless of the person's performance capacity; and 4) the person can do a given action but does not want to. It is possible to categorize the individual framed in these four situations. First, the person who wants to do something, and can do it, is free. Second, the person who does not want to do a given action, because the individual knows he or she is unable to do it, is realistic. Third, the person who wants to do something, but is not allowed to do it by the regulatory system, is either rebellious or unrealistic. And fourth, the person who can perform a given action, but does not want to, is demotivated. When freedom and realism abound in society, opportunities are swiftly taken, and waste is minimized for unrealistic situations, poorly perceived as opportunities, are rare. However, there is a huge welfare improvement opportunity when the cases enumerated in numbers 3 and 4 occur. The symptoms of a weak human organization are provided by the increased number of members of the society fitting on the third and fourth ranks.

Building an economy that consistently takes advantage of every opportunity presented by the environmental conditions is impossible under a society that does not grant freedom to its members. Furthermore, it is impossible to build an adequate regulatory system in a society that does not know the goals being collectively pursued. Finally, it is impossible to grant that overall welfare is maximized in a society where rebels and demotivated persons exist.

The effective use of the opportunity concept acquires an additional complexity due to the human combination of huge creativity and bounded rationality when seeking value. Specifically, humans are very creative living beings who are always inspecting their surroundings to improve their self-well-being situation. Usually, this means reaching the highest personal standard of welfare with the least possible effort and uncertainty. This also means that humans can manipulate environmental circumstances to take advantage of the situation. When we are doing it to improve overall welfare, we are engaging in positive opportunistic behavior, for we all end up even better with the increasing number of individuals acting similarly. When we opt for deceptive methods, doing it to take advantage of the remaining members of society, we are engaging in negative opportunistic behavior, for we all will be living worse if any other member of society acts alike. Hence, understanding the way each human being perceives what is "value" combined with the actions that are developed to capture "value" enables us to further increase our knowledge of how opportunities are taken. The concept of "value" is another foundation of Normative Economics.

3- Value

“Value” can be defined as someone’s or something’s contribution to reaching a goal. The goal to be reached settles the scope for the material and immaterial conditions that are valuable to the individual. Since each person has unique preferences and tastes, goals are not homogeneously distributed across society. Accordingly, the perception of what is valuable differs from person to person. When the goals of an entire society are to be met, the collective interest is the guiding light of the desired conditions to be granted, and the identification of what is valuable to secure overall welfare becomes unanimous. Understanding what “value” is all about, why it changes, how it changes, and when it is optimized is crucial to enable a society to reach the highest possible level of welfare.

In its most plain framework, value is a measure of the benefit that can be reached by taking an opportunity. This definition of value is homogeneous across the entire society, regardless of the heterogeneity that its members might reveal. Accordingly, individuals combine their creativity and rationality to pursue the creation of value, driven by self-goals, and without paying attention to what might be society’s overall best interests. Thus, it becomes clear that conflictual behaviors are raised in every society where there are members whose specific interests, or goals, are disregarded. Furthermore, it also becomes clear that it is impossible to optimize overall welfare without an adequate structure to channel human behavior into a positive mode, i.e., in such a way that everybody lives better the more that behavior is replicated in society. To the economist, understanding how the creation or destruction of value happens in society is paramount.

The awareness that the individual pursuit of value creation might lead to the looming of conflictual behaviors sets up the essence of a thriving society. A simple, mundane, example is provided by the bar’s service to its customers. When a customer enters the bar and asks for a beer, the first beer served aims at improving both the customer’s welfare through the enjoyment of the good and the barman’s welfare through the receipt of money that enables the bar owner to exchange it for appreciated goods in a near future. However, it is in the barman’s self-interest to serve another beer to this same customer, and the barman likely acts in such a way. It is worth noticing that beyond the threshold of satiety, the customer’s welfare will decrease if the barman’s effort of selling one more beer to this customer is kept going. There remains no doubt that, beyond the point of consumer’s satiety, the seller’s interest is opposite to the buyer’s interest. In this example, if the customer gets to a stage of drunkenness, the overall interest of the entire society gets compromised. A thriving society must raise an institutional environment that safeguards overall interests, without leaving anyone behind.

The above-mentioned example shows that value changes according to circumstances, even when we are considering a single person. Note that the customer is getting a lot more enjoyment from the first beer in the bar than the satisfaction from the sixth. However, unless the barman is not facing disturbances caused by drunk customers, the individual will steadily pursue his or her selling efforts which always provide the same value – the one inherent to the monetary sell-price of a beer. Collectively, society is always losing value when the consumer reaches the point of satiety but the producer keeps forcing the consumption activity beyond that stage.

How people pursue their goals defines the nature of the opportunistic behavior they develop and consolidate in society. The above-mentioned example of the bar customer asking for beers shows that positive and negative opportunistic behavior can happen in society according to circumstances. Therefore, it is not straightforward in what way is a society evolving without having an accurate

sense of the type of opportunistic behavior that the institutional environment is consistently spurring.

The process of creating value in society is unavoidably dependent on people's engagement in productive activities aimed at delivering appreciated goods to each other. In a society, a person produces beer in a far higher quantity than the one required to fulfill self-need because he or she wants to exchange this surplus with the surpluses produced by the remaining members of society on a wide range of appreciated goods and services. When people are focused on increasing their productivity and aiming at fulfilling other persons' needs, they engage in positive opportunistic behavior, for the person himself will be better off the higher the number of the remaining members of society acting similarly. Regardless of moral considerations, what is positive opportunistic behavior can be precisely defined and objectively connected to the process of value-creation.

It is interesting to note that, when money is used in society to facilitate transactions, the creation of value by firms has a consistent positive effect on their financial statements. As put by Chantal Gensse "*My market has to love me and I must love my market.*" This motto has enabled the consultant to help each client firm consistently find ways of growing their businesses by maturation rather than by accumulation. Firms have increased turnover by identifying what is truly important for their final customers and making it perceptible before the market. By this token, a successful bartender will likely conquer his or her market's loyalty by identifying when each customer reaches the point of satiety.

The link between the consistency of positive opportunistic behavior and value creation is of the utmost concern to Normative Economics. It is impossible to consistently ensure overall welfare without simultaneously channeling human behavior into a positive mode while inhibiting negative opportunistic behavior. We have just seen that value creation happens when society can increase productivity while providing the means for the surpluses to be exchanged among its members and controlling for the looming out of negative opportunistic behavior. Identifying the regulatory system that optimizes the human propensity toward positive opportunistic behavior is, therefore, paramount. However, to succeed in this endeavor, society must first recognize the different types of "values" that individuals pursue when setting their goals and seeking opportunities.

In 1776, Adam Smith (p.32), in his work "An Inquiry into the Nature and Causes of the Wealth of the Nations," poses that "*the word value has two different meanings, and sometimes expresses the utility of some particular object, and sometimes the power of purchasing other goods which the possession of that object conveys.*" Following this reasoning while embracing the above-mentioned process of value-creation inherent to the production and exchange of surpluses, we realize that a produced good has simultaneously use-value and exchange-value. If we consider the simple example of the production of beer, it is clear that the beer's producer aims at producing a quantity far beyond his or her self-consumption's need to exchange this surplus with the surpluses of the disparate products and services held by the remaining society members. Hence, the beer has, simultaneously, the use-value inherent to its immediate consumption, and the exchange-value intrinsic to the number of other goods that can be traded with other society members by swapping them with beer. But the transactions between the goods produced by a wide number of society members can be optimized if society finds a consistent and easy way of facilitating the exchange of goods between its members. The general use of a single good meant to facilitate the exchange of the goods produced in society becomes a cooperative effort by which society induces positive opportunistic behavior. The creation of this good enables an increase in the creation of value in society by facilitating the transaction of surpluses between its members. Money has exchange value

only but is an interesting asset to possess. Hence, individuals seek both use-value and exchange-value when defining their goals and seeking their opportunities.

The dynamics of human behavior cannot be dissociated from considerations of how value is pursued. When an individual takes an opportunity and engages in a given endeavor to reach a goal, the person develops a given number of efforts while expecting to reach a clear welfare improvement. Although not always successful, this quest for value is permanent to every human being. The difference between the well-being felt before the engagement and the finally reached welfare level gives rise to an individual evaluation of gains and losses.

Gains and losses are, therefore, the outcome of an opportunity that is taken. When a person succeeds, or fails, by acting upon an identified opportunity, it spurs an expectation regarding repeating the experience in the future and hands out a thrust on the remaining members of the society who can perceive that outcome. This expectation, in turn, might spark a stream of responses from other members of society whose reactions impact society's overall welfare. The effect of an individual's outcome when he or she is grabbing an opportunity extends far beyond the individual scope to reach a collective sphere. Thus, for each person is unique and circumstances vary frequently, it is important to understand how the individual's decision-making process occurs according to each person's perception of both potential gains and potential losses.

The aggregate of individual perceptions on the potential for making gains and avoiding losses sparks the decision-making process to produce choices. The society is necessarily heterogeneous due to the inner exclusivity of each human being. Therefore, deploying a thriving institutional environment, that applies equally to every society member and where individual choices naturally combine to generate the highest possible overall welfare, is vital to the development of Economics. Moreover, it is not possible to identify both the collective goals to be met and the inherent enabling regulatory system that allows society to be successful in such endeavors, with the least possible effort and the highest possible safety, unless the economist holds a solid understanding of how individual choices are being consistently perpetrated.

Science has shown that the human quest for value is highly homogeneous across every member of society. The works of Daniel Kahneman and many other researchers have been producing enlightenment on the consistency of human choices when faced with the potential for grabbing a gain or avoiding a loss. Specifically, identifying nonlinear preferences in choices taken upon uncertain outcomes gave rise to understanding the human homogeneous behavior regarding risk aversion, risk-seeking, and loss aversion. Depending on the circumstance, the relationship between the value sought by the individual by the exertion of a choice to either take a gain or avoid a loss is now perfectly known. Hence, a spot of homogeneous overall interest has already been identified and is of the utmost importance for the continuous development of Normative Economics.

The form of the Value Function results from the preference homogeneity that individual behavior exhibits. As put by Amos Tversky and Daniel Kahneman (1992, p. 57) "*preference homogeneity is both necessary and sufficient to represent v as a two-part power function of the form*"

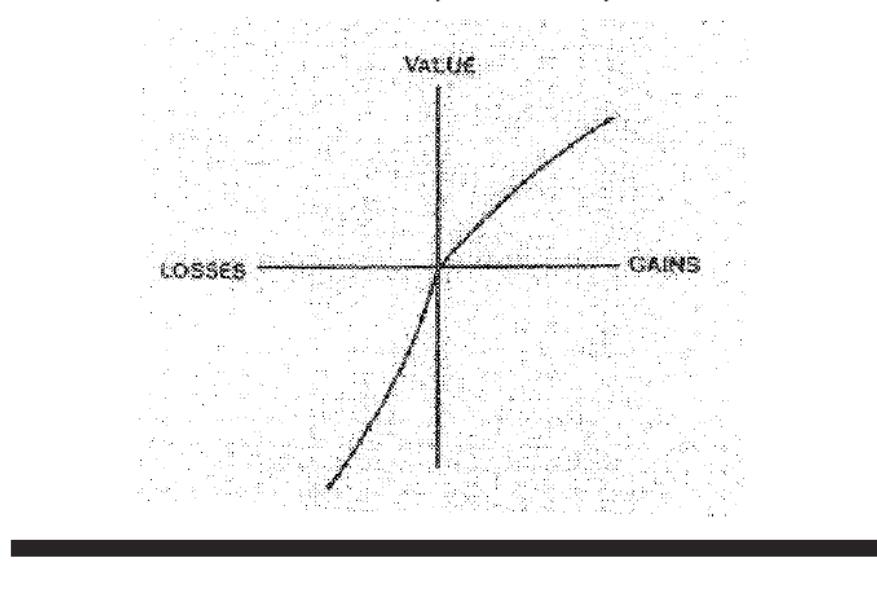
$$v(x) = \begin{cases} x^\alpha & , \text{ if } x \geq 0 \\ -\lambda(-x)^\beta & , \text{ if } x < 0 \end{cases} \quad (2)$$

where the median λ was 2.25, $\alpha \in]0,1[$, and $\beta \in]0,1[$. Furthermore, Daniel Kahneman (2003, p. 705) outlines that "*the value function is a psychophysical mapping*" and "*is defined on gains and losses and characterized by four features: (a) it is concave in the domain of gains, favoring risk aversion;*

(b) it is convex in the domain of losses, favoring risk-seeking; (c) most important, the function is sharply kinked at the reference point and loss averse – steeper for losses than for gains by a factor of about 2-2.5 (Kahneman, Knetsch, & Thaler, 1991; Tversky & Kahneman, 1992); and (d) several studies suggest that the functions in the two domains are fairly well approximated by power functions with similar exponents, both less than unity (Swalm, 1996; Tversky & Kahneman, 1992).”

Figure 1 puts into perspective the shape of the value function. In the domain of gains, the function outlines that people often prefer a certain gain over the probability of winning a much larger prize, even when the expected value of the gamble is higher than the sure gain. For instance, people often prefer to pocket a sure gain of € 10,000 over the possibility of taking a gamble of winning € 50,000 with a 25% chance. Hence, humans are risk-averse. On the other hand, in the domain of losses, Tversky and Kahneman (1992, p. 45) pose that “people often prefer a small probability of winning a large prize over the expected value of that prospect.” By this token, it is plain that people opt for the certain loss presented by a lottery under a near-zero winning chance. In the losses domain, the function highlights that humans are risk-seeking individuals. The Value Function also outlines that people often prefer a sure loss over a substantial probability of a much larger loss. For example, people often choose to pay € 200.00 to avoid the possibility of losing € 10,000.00 with a 1% chance. This human propensity is the core of the insurance industry. Hence, humans exhibit a preference for security, or loss aversion, that extends beyond the threshold provided by the mathematical fair value. Taking gains and avoiding big losses are often the goals of the human decision-making process. However, too often, humans choose to take losses even without being aware of it. And that is something that needs to be understood to maximize welfare. Therefore, understanding the Value Function acquires great relevance in channeling human behavior into a positive opportunistic mode.

Figure 1. *The Value Function of Prospect Theory*



September 2003 • American Psychologist

Source: Kahneman, D. (2003) “A perspective on judgment and choice: mapping bounded rationality”

The assistance provided by the Value Function to enable the enactment of a regulatory system that fosters positive opportunistic behavior is astonishing. One of its remarkable characteristics regards the value of λ . Researchers have reached a median value of 2.25 for λ , which outlines the much higher steepness of the function in the domain of losses than what happens in the domain of gains. This finding is consistent with past research. In 1980, Richard Thaler documents that the maximum amount people pay to acquire a good is often half the minimal amount required to give it away. In 2003, a straightforward interpretation of these findings is posed by Daniel Kahneman (p. 705) who states that "*a good is worth more when it is considered as something that could be lost or given up than when it is evaluated as a potential gain.*" Therefore, individual choices are quite disparate according to the circumstances that each person faces regarding their welfare reference point.

In the institutional realm, the Value Function is an important provider of objective insights into how to raise a regulatory environment that maximizes overall welfare. Human opportunistic behavior is developed to seek value. Since identifying the opportunity depends on the circumstances available and holding executive power to act, opportunities depend on the regulatory system that society chooses to abide by. Knowing what constitutes an enabling bureaucracy and what constitutes a coercive bureaucracy becomes crucial to setting up an adequate institutional environment that induces positive opportunistic behavior.

Positive opportunistic behavior happens when someone acts to improve his or her welfare while being fully aware that he or she will end up better off if the remaining members of society act the same way. In this situation, the person perceives a winning opportunity and expects the remaining members of society to follow through. Hence, being free to act upon the identified opportunities is paramount for disseminating positive opportunistic behavior in society. According to the Value Function, we are in the domain of gains. Moreover, this situation presents a risk aversion behavior. The individual accepts engaging in productive efforts to grab a given gain and is aware that this gain can be higher if the remaining members of society follow the example. Moreover, the person prefers the certain gain coming out from his or her productive efforts compared to standing still. Building an enabling bureaucracy is the cornerstone to ensure a thriving society that works together to improve its living conditions continuously.

Negative opportunistic behavior occurs when the individual acts to improve his or her self-welfare while being fully aware that he or she will end up worse off if the remaining members of society act similarly. In this situation, the individual perceives a potential gain but also expects that the remaining members of society will not do this deed. According to the Value Function, we are in the domain of losses. This situation presents a risk-seeking behavior. For instance, the individual perceives an opportunity to take a big gain and goes for it regardless of being aware of a sure loss if others act alike. Nowadays, examples of negative opportunistic behavior are countless: stealing, bribing, embezzlement, firms' engagement in deceptive practices to lure the customer, or the occurrence of contractual breaches between economic agents, all reinforce society's need to learn to deal with these problems.

The concepts of value and overall welfare are two different things for the individual human being. Microeconomics identifies that humans get satisfaction from the actions of consumption and leisure. By this token, individuals acquire more value when their ability to consume and enjoy leisure time increases. This capacity can be improved through individual efforts, collective efforts, or both. Ultimately, overall welfare is the consequence of the individual's decision-making process to seek value, but value will always be sought to reach personal goals.

The notion that society needs to pay close attention to everybody's needs, truly without leaving anyone behind, is the first thrust to achieve consistency in overall welfare improvement. Regardless of what a single person is doing, it is impossible to reach higher levels of individual utility if the remaining members of society engage in negative opportunistic behavior.

Value is, thus, closely connected with the concept of utility in a specific way. Individual well-being is a function of both consumption and leisure time and can be written accordingly as

$$\text{utility} = f(\text{consumption}, \text{leisure}) \quad (3)$$

where the highest possible levels of utility become human behavior's goal. However, gains and losses are the guiding lights of the human decision-making process, and, therefore, the value of a thing corresponds to the increment of utility that an individual can get provided by the thing.

Maximizing overall welfare is impossible unless every member of society is maximizing individual utility. Since value is sought to fulfill personal needs, strategic behavior is continuously in place, requiring analysis and surveillance due to the dual nature of opportunistic behavior. It is impossible to fully understand how individual behavior combines in society to produce a collective outcome without understanding how the interactions between human beings acquire either a positive or a negative mode. It is, therefore, crucial to understand the game people play under the regulatory system a society chooses to abide by.

4- The rules of the economic game

The design of a bureaucratic system that delivers individual value and secures overall welfare presents one significant challenge: Combining the need to provide freedom to society members while preventing negative opportunistic behavior. Fortunately, positive opportunistic behavior is easily induced by simply letting people act upon the perceived opportunities under a uniform regulatory system that enables society to reach its goal. For instance, defining a car traffic rule of driving on a given side of the road aims to prevent front collisions between vehicles. This is an enabling rule because it authorizes the movement of vehicles on the road while contributing to preventing traffic accidents. Regardless of a subjective analysis, any rule is adequate if it enables society to reach its goal. In this example, it does not matter if the rule stands for left-hand traffic or right-hand traffic, for both are equally suitable according to the purpose. Unfortunately, providing freedom for people to act at will also creates difficulty in precluding negative opportunistic behavior. Sometimes, somebody will be entering a narrow road driving a too-large vehicle which will block the entire road traffic if it happens to face another vehicle coming in the opposite direction. Therefore, devoid of a more efficient way of raising an enabling bureaucracy, the legislator often chooses to withdraw freedom from society members and defines a one-way-only street. Hence, the efficient bureaucratic system settles the rules that provide the safest economic environment for people to act at will while inhibiting negative opportunistic behavior. The bottom line of these thoughts is that identifying the efficient bureaucratic system that optimizes overall welfare can be unanimous.

The type of bureaucracy that society chooses to abide by must be submitted into efficiency criteria. Specifically, to be adequate, the institutional environment must provide the easiest and safest way of inducing positive opportunistic behavior while inhibiting negative opportunistic behavior. Human behavior differs according to the context of the person detecting the opportunity, i.e., human responses to the detected opportunities are distinct whether the person is in the domain of gains or losses. The human perception of value is quite different when people consider the potential of losing a good versus the benefit that it potentially provides before being possessed. These contextual differences pave the way to identifying the bureaucratic system that best serves the purpose of consistently securing the highest possible value for mankind.

Recognizing the differences between disparate regulatory systems is crucial to a critical sense of their effectiveness and efficiency. First, rules can be enacted to enable some behaviors and forbid or inhibit others. By this token, society faces an institutional framework of enabling, disabling, and inhibiting rules. Second, rules are raised and disclosed to either produce collective gains or avoid collective losses. Specifically, an inhibiting rule might be raised to diminish the well-being of the person engaging in negative opportunistic behavior, but it does not necessarily eradicate it. However, an enabling rule might be inefficient as well.

The legislator's reference point regarding the person targeted by the rule might vary between considering only the person's endowment of initial wealth or, instead, being attentive to the value that the faculty of behaving in such a way represents to the individual. The former can be exemplified by the appliance of a fine to someone who speeds up on the traffic road. In this instance, the legislator is trying to induce the prevaricator to feel bad about that behavior by withdrawing a given amount of value. The legislator is aiming at inhibiting the occurrence of a driving behavior that might put in peril the traffic safety by resorting to a simple penalty to the offender. The legislator decides this penalty without caring about the value inherent to being able to drive in the traffic road, which is already held by the offender. It simply assumes that the offender

has an initial amount of wealth that is valuable to the individual and that he or she wants a lot to preserve it. Therefore, in the former scenario, society is embracing a penalty-based system.

The latter situation, where the legislator pays prior mandatory attention to the value that the person is holding from being able to act in a given way, leads to the enactment of completely different kinds of rules, focused on the benefit collected by the person in the first place. In this new scenario, and retrieving the example of aiming at inhibiting the possibility of having someone speeding up in the car traffic, rather than aiming at producing a bad feeling in the offender by simply taking away from him a given amount of money, the legislator is trying to induce the person to drive responsibly by reducing the person's ability to enjoy the benefit. Specifically, rather than producing a traffic ticket when the offense is identified, the legislation might preclude the individual from driving a car for a given time. Rather than magnifying the importance of keeping a given amount of wealth, this rule highlights how important it is to be able to drive every day. This is a situation where society is embracing a benefit-based system.

Worldwide, the current regulatory systems are usually a mix of the two approaches. However, as research has already outlined, humans react differently when deciding in the domain of gains than in the domain of losses. Thus, the effectiveness and efficiency of both regulatory systems, the penalty-based system, and the benefit-based system, to achieve the desired collective behavior in society must be put under scrutiny.

There are, at least, three prospects to look at a regulatory system upon which an unbiased analysis can be performed: 1) how is negative opportunistic behavior identified; 2) how is negative opportunistic behavior deterred; and 3) what kind of law enforcement is required for the regulatory system to be effective. The analysis of these attributes allows one to conclude the requirements that must exist for a given regulatory system to reach effectiveness.

The penalty-based system intends to instill in society to avoid negative opportunistic behavior by applying a penalty to the offender, which diminishes the person's level of well-being. First, the individual engaging in negative opportunistic behavior must be caught in the flagrant offense, otherwise, the satisfaction that the person gets from engaging in negative opportunistic behavior will not be overcompensated by a feeling of the opposite direction in the short term. Hence, the deployment of a penalty-based system requires some form of behavior monitoring. Second, if a fixed monetary penalty is defined by the legislator then, according to the Value Function, it will be felt differently depending on the initial wealth status of the offender. For instance, a car speed ticket of a fixed monetary amount exerts a completely different effect on poor people than on rich people. A ticket of \$100 over someone who earns a monthly income of \$1,000 has a completely different dissuasive effect than applying the same quantitative fine over a person who earns a monthly income of \$10,000. Hence, on one hand, the desired dissuasive effect of inducing people to avoid negative opportunistic behavior depends on how adequate and proportional is the penalty according to the target subject of the measure. On the other hand, the system is completely ineffective against outliers. That is, someone who is devoid of any wealth cannot be effectively targeted by the regulatory system, and the same thing happens to anyone who possesses an extremely huge wealth to whom a \$100 traffic ticket is insignificant. Therefore, to be efficient, the penalty-based system demands the legislator to identify the initial wealth status of each society member. Third, the execution of the regulatory system itself requires the existence of a dedicated billing structure.

Just as it happens with the penalty-based system, the benefit-based system also intends to foster society to avoid negative opportunistic behavior by applying punishment to the offender. Therefore, it requires to identify this behavior. So, it demands a monitoring system as well. However, by

inflicting a reduction on the benefit that the person gets from being free to act in a given way, the benefit-based system exerts a dissuasive effect that equally applies to every society member, regardless of the initial level of wealth that the individual might possess. Moreover, because this regulatory system resorts to reducing or eliminating the benefit that the person gets from being free to act in a harmful way, the benefit-based system does not require the existence of a dedicated billing structure and it is usually enough to depend upon the existing structures deployed in the first place to grant the right to act. Nonetheless, to be effective, the benefit-based system demands some form of ensuring that the individual cannot escape the required punishment. Retrieving the example of the driver who is caught speeding up on the traffic road, if, instead of forcing the individual to bear a monetary ticket, the legislator forces the individual to be precluded from driving for a month, then the legislator needs to be sure that this kind of measure is doable through some legal enforcement mechanism.

It is plain that both systems, the penalty-based system, and the benefit-based system, imply significant differences regarding the cost of their creation and maintenance, as well as tremendously disparate responses to law enforcement by the society members engaging in negative opportunistic behavior. These differences demand an unbiased analysis of their efficiency in reaching the legislator's goal.

The Value Function outlines that, to humans, an already possessed good is worth a lot more under the prospect of being potentially lost than the value assigned to this same good when it simply has the potential to be acquired. By this token, the approaches provided by the two above-mentioned regulatory systems return different levels of efficiency in their effects on preventing negative opportunistic behavior.

The penalty-based system, which resorts to diminishing the offenders' welfare regardless of the value that society has previously provided to their members, is a mechanism that presents itself to each person in the domain of losses. Consequently, under the individual prospect, negative opportunistic behavior might be justified just as long as the potential gain from engaging in negative opportunistic behavior overrides the potential loss inflicted by the penalty-based system. The benefit-based system, in turn, punishes negative opportunistic behavior by reducing the benefit that individuals are getting from being free to act in a harmful way to the remaining members of society. This is a mechanism evaluated by humans in the domain of gains. The Value Function shows that the human preference for security – or loss aversion – is, at least, twice more intense than our desire to grab a potential gain. Thus, the desire to keep the ability to collect value by acting freely tends to be proportionally stronger than the desire to avoid being faced with a given fine. Particularly in the short-run, and just as long as the individual believes that the remaining members of society do not act alike, the benefit-based system is more efficient than the penalty-based system in dissuading negative opportunistic behavior.

Regardless of operational criteria, it is, therefore, clear that both system's effectiveness depends on the individual perception of the value gained or lost under the enacted regulatory system. In light of what has just been identified, under a penalty-based system it will always be possible to settle a penalty that is big enough to get a stronger dissuasive effect than the punishment enacted under the benefit-based system to inhibit negative opportunistic behavior. However, because the penalty-based system has trouble being proportionally adequate in its punishment, the effectiveness of the system varies according to the targeted subjects' idiosyncrasies. Contrariwise, because the benefit-based system acts in the domain of gains, the benefit collected by being free to behave is likely to be more or less even across every society member and, so, the privation of this ability is likely to be felt similarly by everyone. No matter the differences in deploying the two regulatory systems, the

penalty-based system will always tend to raise a higher number of fairness considerations across society, which makes it unstable.

Finally, it is worth mentioning that the benefit-based system can only be used after society has created some collective good whose benefit is within everyone's reach. Note that the penalty-based system does not require such a prerequisite. Under the penalty-based system, the legislator will simply demand his or her subordinates to obey the law, for the penalty will apply just as long as an offensive deed is produced, according to the law, no matter the nature of the gain that is sought by the offender. The dominance of regulatory frameworks where benefit-based systems are the norm implies the existence of a society where people have previously learned to work together to safeguard a collective goal.

In society, individuals seek value to improve their well-being regardless of the existence of any regulatory system. Due to identifying individual human behavior that compromises the well-being of the remaining members of society, Normative Economics acquires tremendous importance in securing overall welfare. Usually, a society empowers some person or entity to govern a uniform individual behavior that best serves overall interests. Hence, before identifying the best institutional environment to foster overall welfare, the economist needs to understand why and how individual behavior endangers overall welfare.

As put by Martin J. Osborne and Ariel Rubinstein, in their work "A Course in Game Theory" (1994, p.1), game theory is "*the bag of analytical tools designed to help us understand the phenomena that we observe when decision-makers interact.*" Economics is aware that every decision-maker interaction depends on the circumstances faced when an opportunity exists. Moreover, economics realizes that the nature of the game has several different characteristics. The game can be cooperative (where joint actions are allowed), non-cooperative (only individual actions are allowed), strategic (each player chooses his or her plan of action only once), extensive (when the decision-making process extends across multiple interactions), and with either perfect or imperfect information. Ultimately, every game people play aims at securing individual gains.

It is widely accepted that we live in a competitive society where strategies are deployed to acquire some advantage over the remaining society members. But the strategic game happens when each player chooses his or her action plan only once and, hence, it is framed in a very narrow short-term reasoning. However, it is just plain as well that value creation depends on a society's ability to increase productivity, which usually demands a higher level of task specialization of its members and their afterward capacity to exchange surpluses among themselves. But, when joint actions are allowed, the game is, necessarily, cooperative. Consequently, the dominance of adopting a competitive attitude detrimentally to a cooperative one becomes an intriguing human profile that requires further inquiry.

We know people assign a positive value to the utility felt by consuming and having leisure time, while everybody acts upon that desire. Therefore, we can attach this individual utility to a given payoff. Furthermore, due to the observance of strategic behavior when humans interact in society, we know that the perception relative to the available payoffs is not widely spread over society members and it rather acquires significant relevance when the same opportunity is identified by several persons at once – or, at least, this concurrency is expected by the decision-maker. The idea of engaging in some kind of strategic behavior to take the highest possible payoff from an opportunity only makes sense under such a scenario.

The perception about the payoffs presented by an opportunity may vary between an exact certainty and a slightly possible outcome. Nonetheless, uncertainty might be considered by assigning a probability of occurrence, α , to each possible foreseen payoff, p , presented by each scenario of an opportunity, k , and calculating the likely payoff as the $\sum \alpha_k p_k$. This allows us to incorporate uncertainty even when using a single payoff value. Therefore, without loss of generality, it is possible to rank the utility associated with an opportunity by using singleton values.

Let us consider the payoffs brought out by an economic game played under the rules shown below in Figure 2. In this game, the society is composed of two people who distribute among themselves the outcome of their labor for one year. The two persons are free to choose between cooperating in the production of goods and services or competing to see who can take the bigger portion of the entire production. Further, the product of their labor efforts is higher if they opt to cooperate – 12 when they join efforts and 10 when someone engages in competitive behavior. What is their choice: to compete or to cooperate?

Figure 2. The economic game

		Player_2	
		Compete	Cooperate
Player_1	Compete	(5,5)	(7,3)
	Cooperate	(3,7)	(6,6)

Source: Author's own creation

Analyzing each player's best choice provides a clue to what is the most likely option taken by them. Each cell displays the players' payoffs according to the format (player_1, player_2). Let us consider that, mainly, player_1 aims at maximizing his or her utility. When both players choose to compete, they end up with 50% of society's total production, reaching a utility level of 5. However, if player_1 chooses to compete while player_2 chooses to cooperate, player_1 will be grabbing 70% of society's total production to himself. So, to maximize his or her utility, player_1 natural option is to compete. However, let us consider that player_1 is, chiefly, a loss-averse person instead, and wants to minimize losses. In this new scenario, player_1 realizes that the most dangerous option happens when he or she chooses to cooperate and player_2 chooses to compete. In this case, player_1 prefers to compete because he or she is granting a lower loss than the alternative of cooperating in a situation where player_2 might choose to compete. Since both players face the same problem and possible payoffs, regardless of personal proclivities toward engaging in riskier activities to capture gains or focus their decision-making process on avoiding losses, their likely option is to compete rather than cooperate.

Now, if both players realize that they are going to interact for several periods in the future, will they keep their choices? Consider the possibility of an agreement between the players towards cooperation. In this instance, both players will be expecting to reach a utility level of 6 while being tempted to compete, for it immediately yields a higher payoff of 7. Let us say that player_1, unilaterally, chooses to break the agreement. After player_1's betrayal, player_2 will never again engage in an agreement. Considering four periods, we will have a player_1's total payoff of 22 ($=7+5+5+5$) while player_2's total payoff is reaching 18 ($=3+5+5+5$). Since, in this game, each period is set to one year, had the players rejected the choice for deception and they both would have ended up better in only four years, yielding a total payoff of 24 each ($=6+6+6+6$). Just as long as the

assumption regarding society's ability to reach higher levels of productivity when engaging in cooperative efforts is confirmed, what seems to be the optimal strategy for a one-time decision cannot be a long-term winner. When the game is extensive, a competitive society holds an emotionally-based decision-making process and the individuals adopting a competitive attitude are players that do not know how to win.

Understanding the economic game outlines how challenging it is for a society to consistently maximize overall welfare while holding the highest levels of individual well-being to each of its members. It is worth noticing that, in the real world, the decision-making process is severely conditioned by the players' expectations regarding the likely payoffs available by competing or cooperating. Nonetheless, the above economic game illustrates the positive dependence between both players to reach higher levels of utility (or welfare). In the game illustrated in Figure 2, and in a four-year scenario, after Player_1's betrayal, the person ends up scoring an accumulated payoff of 22 while player_2 finishes the four years holding 18. Further, player_1 will be scoring a higher payoff as soon as possible and will be living significantly better than player_2 during the first year only. However, if both players choose to engage in cooperation mode then they both end up better after the four years. By cooperating, both players will be holding the payoff of 12 after two years, which is the same payoff that player_1 will hold in year two by choosing to betray. In the presented economic game, betrayal constitutes negative opportunistic behavior because it leads the decision-maker to end up worse off if the remaining members of the society act alike. Nonetheless, after someone's first betrayal, the other player has no other choice but to compete. The looming out of negative opportunistic behavior might trigger negative opportunistic behavior consistency from the remaining members of society. And the existence of negative opportunistic behavior precludes society from reaching the full potential of the available value.

If we change the game's rules presented above to a different payoff matrix, as shown in Figure 3, what would be each player's choice?

Figure 3. Changing the economic game

		Player_2	
		Compete	Cooperate
Player_1	Compete	(5,5)	(7,3)
	Cooperate	(3,7)	(8,8)

Source: Author's own creation

Under this kind of rule, since each player is going to strategically make a one-time decision to grab the highest possible gain, then each player will easily choose to cooperate. In this instance, under an extensive game continuously played across time, people will consistently hold their cooperative propensity just as long as they perceive it to be the best way to safeguard self-welfare. But it requires that every society member is immediately improving his or her gain potential.

These two games put into perspective that mankind is in permanent competition with itself. We strive to reach higher levels of individual payoffs but, to optimize our success in the long run, we need to do it collectively. Globally, under our current regulatory systems, the severely uneven distribution of wealth produced leads some society members to dominate others. As shown by the Value Function and past research, individuals tend to assign a higher value to the goods already

possessed than the potential benefit of acquiring that good. Hence, having to give up some gains in the short run to get a higher return in the long run is something that humans have no propensity to do. These two games provide a first glimpse of why mankind is collapsing.

How much value are we losing for living in a society that confuses dominating with competing? Because individual behavior takes place under a given regulatory framework that settles the boundaries for personal actions, the awareness of the regulatory system that best serves collective interests becomes paramount for mankind. When the economist can quantify this loss, society reaches a stage of unanimous understanding of the importance of securing positive opportunistic behavior while disabling and inhibiting negative opportunistic behavior. The opportunity cost inherent to a society that chooses to engage in a competitive mode is, therefore, requiring to be measured.

It is of the utmost relevance to realize that it is not easily foreseen, nor it is still well understood, why, how, and when is the individual fully aware of the gains that are there to be secured by engaging in cooperative behavior with someone else. In 1989 (p. 89), P. Christopher Earley poses that "*in an individualistic culture, people look to their own actions to understand who they are*" and "*in a collectivistic culture, people base their self-understanding on the reaction of important others around them.*" Consequently, psychological propensities contribute to individual choices.

It is also important to note that the competitive behavior observed in society is not merely confined to the business environment, controlled by big corporations, but it extends to the individual level as well. For instance, the existence of social loafing is a form of negative opportunistic behavior. This behavior manifests when people reduce their performance when acting as part of a group. To the individual, it is a way of being entitled to a higher level of utility by being able to keep the same consumption ability (income) while enjoying additional leisure time and/or committing lower work efforts. Nonetheless, the person engaging in social loafing practices will live worse if the remaining members of society act similarly. Hence, the economic game applies to every society member.

When human interactions occur, the option for strategic behavior that defines a win-lose final result for the parties requires two conditions: 1) the mind of the decision-maker is set up to a one-time frame only; and 2) there is a very well-perceived and valuable outcome that is considered to be known by the parties. The first requirement is necessary because the person does not consider the opportunity gain lost due to the absence of a continuous interaction that extends beyond the initial time frame. Otherwise, cooperative efforts would be sought. The second requirement becomes obvious once we note that the development of efforts to acquire an advantage over an opponent only makes sense when the decision-maker judges, whether correctly or incorrectly, that the other party is aiming at capturing the same value.

The seeking-value strategic behavior is an individual effort to achieve personal goals. At the microeconomic level, the identification of the best plan of action to reach a given goal demands a prior and thorough analysis of the available circumstances. Looking at inner circumstances, the economic agent looks at self-attributes to identify his or her strengths and weaknesses and realize what he or she is capable of. Considering outer circumstances, the individual seeks threats and opportunities to raise protection against potential losses and act to grab available gains. The human deployment of strategies to capture value is at the core of economic analysis.

As outlined by the economic game illustrated in Figure 2, the effects of the interactions of several microeconomic behaviors give rise to a given level of overall welfare. Since strategic behavior is developed under a win-lose mindset, where individuals seek advantages over the remaining

members of society to capture value, plans of action are deployed to set up a playfield that enables the legislating entity to reach its own goal. Accordingly, the legislator might be acting to safeguard either society's overall general gains or individual, and very specific, ones. The regulatory system becomes crucial in defining the arena where human interactions occur and is a strong determinant of overall welfare. Understanding the channels of power that either provide or withdraw room to act from the economic agents is something that cannot escape economic analysis.

When some form of rule or regulation is produced, it aims to achieve a given result in channeling human behavior into a given direction. Nonetheless, the legislator's effort might be directed toward an individual goal or is spurred by a desire to safeguard overall welfare instead. Hence, if the law is enacted under a biased focus toward safeguarding competitive advantages of a fraction of society detrimentally to the remaining members it can only be effective on the entire society if the legislator has coercive resources to force the society's rebel fraction toward a given behavior. In this instance, human behavior is not voluntarily looming out, nor are the entire society members enable to act upon every identified opportunity to capture a gain. And society is often bearing a huge opportunity cost when positive opportunistic behavior is being hindered.

The unavoidable link between the efficient exchange of surpluses to reach higher levels of overall welfare has led Economics to focus on the act of the transaction itself. The effects of the costs of transactions within the business domain have been dealt with by social sciences with a focus on negative opportunistic behavior. Oliver E. Williamson (1981, p. 554) defines that "*opportunism makes provision for self-interest seeking with guile*" and positions the contract as a key tool to increase economic efficiency. Hence, the contract emerges as a tool to safeguard good-faith negotiations, precluding misunderstandings or deceptive proclivities and, therefore, contributing to increased economic efficiency. Nevertheless, the contract is a bureaucratic step that has inherent costs in its production.

The use of this defensive mechanism against negative opportunistic behavior focuses on defining what the parties are promising to each other while being the parties aware of the applying penalties to those who, unilaterally, break the agreement. The contract is based on mutual benefits while the penalty occurs in case of default only. When society resorts to contractual practices while leaving the economic agents to perform their agreements at will, it fosters positive opportunistic behavior by allowing people to act upon the identified opportunities and inhibit negative opportunistic behavior by simply acting upon the offender. The contract enables society to reach higher levels of welfare.

The existence of both positive and negative opportunistic behaviors is irrefutable and must be embraced, for it is simply the outcome of natural human behavior. In its simplest definition, opportunistic behavior is nothing else but the expression of our human creativity, and it can acquire a positive or negative nature, regardless of our awareness of it. The Value Function provides an understanding of why negative opportunistic behavior exists despite its contribution to worsening overall living conditions when it is perpetuated and widespread. The economic game shows why a short-term tunnel-vision-focused behavior leads mankind to consistently engage in negative opportunistic behavior. The boundaries of our rationality demand us to be vigilant about who we are and what we do.

The decision-making process can be reduced to the simple production of a "YES" or "NO" outcome. Regardless of the opportunistic economic nature that the decision might acquire, the first step to evaluating an opportunity is to consider the available circumstances and decide if a possible

course of action will produce the desired outcome. Hence, the decision-making process follows a binomial distribution.

The dual mental structure held by humans, where a “YES” or “NO” decision-outcome produces an effect on the remaining members of society, enables the legislator to condition the behavior of society members by defining what is, and what is not, allowed to do. This accomplishment can be done through spurring private initiative by rewarding individual efforts to produce something good for everybody and/or by defining a penalty for those persons whose actions harm the remaining members of society. Consequently, the legislator’s action is determinant in defining the level of overall welfare that a society can reach.

On one hand, if the regulatory system is raised to avoid the negative effects of the actions of some members of society on others, then several remarks are mandatory.

First, the legislator is the entity responsible for preventing negative opportunistic behavior. Accordingly, what is considered by the legislator as offensive to the remaining society is something that will be punished by legal enforcement. In this instance, society members are allowed to act at will unless the legislator defines it as not allowed to do so. However, given the human propensity to seek value, the legislator tends to be mainly worried about self-priorities rather than considering overall welfare.

Second, acting under this principle of focusing on avoiding negative opportunistic behavior, when evaluating a possibility, each society member is the person who says “YES” to a given possible course of action while the legislator is the entity that says “NO” to the possibilities that are considered to endanger overall welfare. Hence, under this type of regulatory system, penalties are legally raised over the offenders while the legislator is embracing the realm of avoiding losses. These are regulatory systems that define very steep hierarchical structures, where the lower members of the social structure identify an opportunity and propose a given course of action, whether the legislator decides if it is allowed to go on.

Third, since the regulatory system is raised to avoid the negative effects of the actions of some society members on others, positive opportunistic behavior is a legislator’s forgotten spotlight for it is not producing a legal environment that fosters the private initiative to go far further on its own. Contrariwise, the legislator only stands out by extending the penalties over the remaining members of society. In this regulatory framework, individual freedom tends to be highly restricted and a competitive environment for the favors of the legislator entity is highly induced.

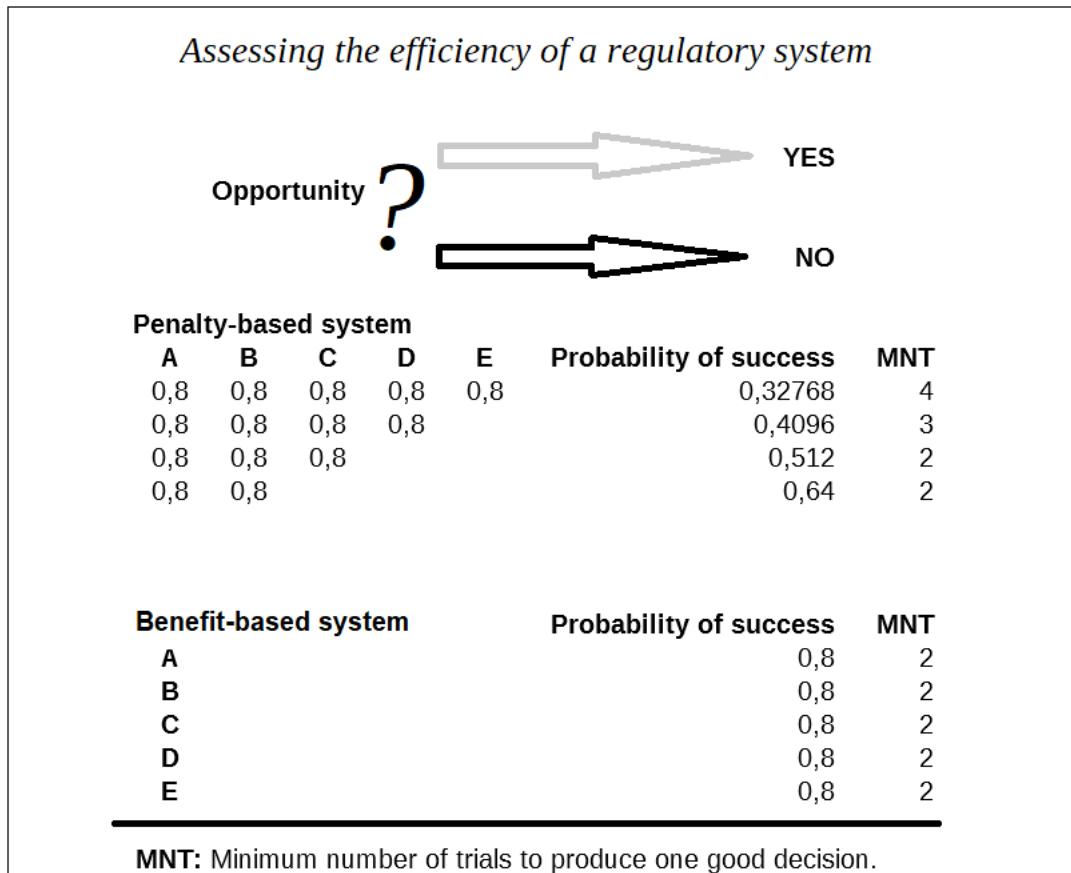
On the other hand, if the regulatory system is raised to foster positive opportunistic behavior, several different effects occur in society. In this instance, the legislator is forced to focus on the actions that foster overall welfare improvements before understanding the danger of negative opportunistic behavior. Accordingly, every identified opportunity must be taken for humans to act seeking value. The higher the number of successful society members, the higher the level of overall welfare that society can reach. The legislator entity acts in the domain of gains. It tends to provide freedom to society members while trying to ensure that only positive opportunistic behavior occurs by setting up ways of reducing the level of benefit that can be reached if negative opportunistic behavior looms out. In this latter instance, facing the danger of a chaotic society, the legislator acts to reduce or eliminate the benefit that any society member is illegitimately trying to capture. Accordingly, under a benefit-based system, the legislator leaves to the individual level the possibility to assess if a given course of action is worthy of his or her efforts, and “NO” to negative opportunistic behavior is mainly expressed by the entire society for it is the way to avoid reducing

the level of value that can be reached. In this regulatory system, rather than authorizing a given course of action, the legislator stands out by its ability to coordinate efforts, and individual autonomy is extolled.

The binomial nature of the decision-making process enables us to infer the effectiveness of the two regulatory systems to efficiently foster economic development. Let us consider that the individual decision-making process is not always accurate and bad decisions happen once in a while. Moreover, consider that the decision-making process can only happen under the two above-mentioned regulatory systems and that the average society member decides well 80% of the time, where a good decision is the engagement in positive opportunistic behavior and a bad decision is the option for adopting negative opportunistic behavior. Finally, consider that the proximity of the legislator entity to the entire society varies according to different hierarchical levels. In this instance, it is possible to calculate the society's probability of producing good decisions that foster overall welfare under a given regulatory system. Figure 4 evidences the calculus of the probability of reaching good decisions for several hierarchical structures in an organization composed of 5 persons, under each of the two regulatory systems.

Figure 4 evidences the assessment of the efficiency of the two regulatory systems mentioned above.

Figure 4.



Source: Author's own creation

The hierarchical levels of the organization are set from level "A" to "E" where "A" is the bottom level of the organization and the last letter mentioned is the top. Under the assumption that every

person decides with a level of accuracy of 80%, in an organization where producing an action requires the authorization of 5 persons, the probability of coming out with 1 good decision is only 32.768%. Conversely, in an organization where autonomy is granted to their 5 members, 4 good decisions will likely be produced. Moreover, whenever one person is required to authorize the action of another, an inefficiency is produced. Even without considering the inherent bureaucracy that separates the two approaches, being aware of the binomial characteristics of the human decision-making process is enough to highlight the advantages of a benefit-based system to secure economic development.

The results evidenced by Figure 4 indeed depend on the assumptions taken. However, only a very significant difference between the participants' decision-making accuracy might lead to a different set of conclusions. The binomial nature of the decision-making process underlines the need to further inquire into the situations where each of the two regulatory systems pertinently applies.

Society is not fully cognizant of the importance of Normative Economics in defining the levels of welfare that it is possible to reach. Consequently, the existence of a methodology to assess the effectiveness and efficiency of a given regulatory system is not in place in our global society, nor have these matters been targeted by social sciences under the broad range that is necessarily required to embrace the entire human race.

There are several meaningful steps to scrutinize the adequacy of a regulatory system: 1) identifying the goal to be reached (i.e., knowing what kind of value is society trying to capture by choosing to abide by a given regulatory system.); 2) identifying the type of regulatory system that is being used to reach the goal; 3) identifying the full range of resources that are required to enforce the regulatory system; and 4) identifying the type of opportunistic behavior that is returned by the regulatory system.

Table 1 summarizes the differences between the penalty-based system and the benefit-based system according to nine attributes. Worldwide, due to technological restrictions and/or human and material resource limitations, the generality of the regulatory systems people accept to abide by are a mixture of the two approaches. Nevertheless, it is crucial to understand each one of them to conclude which will be efficient to reach a given goal under the available circumstances.

The importance of the regulatory system to channel human behavior cannot be underestimated. The literature identifies the existence of institutional pressures of both formal and informal categories – laws, rules, regulations, norms, cultures, and ethics – which set constraints and boundaries for human actions (Peng, Sun, Pinkham & Chen, 2009). This socio-institutional framework defines the scope for economic interactions among individuals and sets up the real dynamics of our welfare. Tina Dacin (1997, p. 46) conceives the institutional environment as “*the arena for ecological dynamics in that institutional forces prescribe institutionally driven selection criteria via which organizations are created or dissolved.*” Also, she remarkably outlines that, instead of contradictory, institutional and market forces are complementary. Even when pursuing their interest (Adam Smith’s “invisible hand”), economic agents cannot ignore the pressures coming out from the institutional surrounding, for the effectiveness of their actions is dependent upon its general acceptance. Institutional and market forces combine to deliver a given level of welfare to society.

Table 1. Penalty-based system versus Benefit-based system

Attribute	Penalty-based system	Benefit-based system
Methodology	It leaves people free to do whatever they want just as long as they do not do something offensive to others. In this case, a penalty applies, which diminishes the offender's welfare.	It leaves people free to do whatever they want just as long as they do not do something offensive to others. In this case, the benefit suffers a decrement through which the individual's welfare diminishes.
Legislation type	Focused on duties and penalties.	Focused on rights and benefits.
Foundations	Based on hierarchy and inertia.	Based on autonomy and performance.
Power distribution	Power tends to be over-concentrated in the lawmaker.	Power tends to be spread all over the community and those who make the law cannot rest above the law.
Legal enforcement	Law is often inapplicable to both lawmakers and defaulters.	Law applies equally to every member of society.
Room for creativity and positive opportunistic behavior	It inhibits people's creativity for they fear being offensive to either lawmakers or authorities.	It spurs people to be creative in making better their way of living while improving others' welfare as well.
Room for negative opportunistic behavior	People are induced to break the law when the potential reward overcomes the potential penalty.	When evaluating the risk-reward payoff of an immediate opportunity, people are induced to consider future welfare decreases before breaking the law.
Dominating mindset	Competitive win-lose focus. Dominance of attitudes of deception, betrayal, and power dispute. Apathy toward other society members.	Cooperative win-win focus. Dominance of attitudes of dialog, respect, and enthusiasm. Empathy toward other society members.
Payoff consistency	Focus on the immediate payoff.	Focus on the long-term payoff.

Source: Author's own creation.

The economic game people play is another building block of Normative Economics. On one hand, it is impossible to support the idea of a free market where negative opportunistic behavior can happen at will. On the other hand, overall welfare is fully dependent on peoples' positive opportunistic behavior seeking value which, in turn, requires having freedom to act upon the identified opportunities. Due to how people play the economic game, the identification of a unanimously accepted regulatory framework that combines a penalty-based system with a benefit-based system will always be a task presenting many hardships.

The need for unanimity is not refutable. In 1995, Mark Suchman (p.574) poses legitimacy as "*a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions.*" Accordingly, if the legislator's actions in defining the regulatory system are not widely perceived as the best ones to secure overall interests, then the legislator is necessarily stepping on unstable ground, for a focus of protests threatens to loom out somewhere.

The economic game outlines the relevance of extensive interactions to both individual and collective welfare and provides a significant clue on how and why they fail to be deployed. It is widely recognized "*that human decision-makers do exhibit rationality, but only within the constraints of their perception of a decision problem*" (Taylor, 1975, p. 409). Among the range of identified determinants of bounded rationality that explain why humans make non-optimal choices, there are two approaches of immediate application in the economics realm: 1) the shape of the Value Function that each individual exhibits when aiming to produce a judgment or a choice; and 2) the existence of a cognitive strain, which refers to the interaction between the characteristics of the decision-maker and the ones presented by the environment. The former explains both why payoffs are determinants of individual economic choice and why losses produce such a magnified effect in comparison with the value assigned to a gain. The latter is generally related to the higher levels of stress that an individual can feel due to being loaded with an amount of information that overcomes his or her processing capacity. Accordingly, the individual adopts compensatory choice modes, looking to reach satisfactory solutions while widely aware that those might be non-optimal.

Under the presence of cognitive strain, people resort to strategies of raising a regulatory framework that allows them to depart from rationality while keeping a sense of proximity to the best solution. Hence, an effective governance structure to channel opportunistic behavior into a positive mode must be able to relieve cognitive strain from the decision-makers' minds while aligning behavioral standards to optimize overall welfare. Normative Economics assumes a very important role in helping society to efficiently overcome this difficulty.

The economic game is the visible outcome of society's quest for value. Due to the way we use money to make transactions easier, and although they are not the same thing, the creation of value is often confused with the accumulation of monetary wealth. What has value to the human being is the individual's ability to consume and enjoy leisure time. By using money to assist in reaching these goals, society sets up a given path for the nature of opportunistic behavior and shapes the interactions among its members, conditioning the game's playfield. It is, therefore, crucial to understand the fundamental relationships established in a society that uses money as a tool of value creation.

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5- The Economics' fundamental units

Money is a good with an exchange value only, but mankind is not fully conscious of its contribution to overall welfare. On one hand, the average citizen does not understand where the money comes from, what are the sources of money creation, how its quantity in circulation varies, and how is society controlling for its best use. On the other hand, the average citizen fully identifies that money is the vehicle required to enable the individual to act. The average citizen knows that money is the primary source of executive power without which no business project can go ahead. Hence, every advantageous circumstance cannot be perceived as an opportunity unless the individual has sufficient monetary means to engage in its persecution. In a society that depends on money to enable trade activity, the individual decision-making process to capture value cannot be dissociated from the requirement of holding monetary assets. Accordingly, since the use of money is paramount for the consolidation of opportunistic behavior, regardless of its nature, then, to the economist, a deep understanding of the role of money in consolidating overall welfare becomes fundamental.

Before entering the analysis of how the use of money conditions society's level of welfare, it is mandatory to inquire how money is incorporated into the individual decision-making process. Due to its exchange value, money is an asset that enables a person to engage in consumption activities. Therefore, it becomes a focus of human attention. By using money, the individual can easily rank the range of enjoyable goods and services. Further, by comparing the cost of different goods and services with the inner utility provided by their consumption, the person grabs self-decision-making process objectivity. The role of money in providing an easier way of assessing the most valuable alternative makes it crucial for channeling human opportunistic behavior.

Identifying the most valuable alternative is at the core of opportunistic behavior. This notion equally applies to either consumer or investment decision-making processes. For instance, consider a person who owns a piece of land from which cabbages are raised for self-consumption. Moreover, consider that the total average annual cabbages collected by the individual amounts to \$100. Finally, consider that this land is an interesting place to build a hotel. An investor comes and offers \$1,000 a year to the owner to rent that land. In this example, the true rent, or the transfer price of the land, is \$900, for it is the difference between the monetary value previously collected by the owner in its prior use and the most valuable alternative that he or she can now dispose of. The owner will rent the land for \$1,000 just as long as he or she considers that \$900 compensates for the troubles of acquiring cabbages in the market.

This example presents us with several important insights. First, the notion of rent, as the transfer price of the use of a productive factor from one employment to another, equally applies to the wage of a laborer, to the profit of the entrepreneur, or to the rent of any productive infrastructure that is thought to be worthy of better alternative use. Second, the notion of rent only makes sense when the productive factor in question is scarce. According to the investor's evaluation, if another piece of land is available and equally suitable to build the hotel, then he or she simply uses it without further ado. Third, it becomes clear that the use of money increases the human propensity to engage in trade activities while seeking value. Fourth, when human trade activities are to be considered, supply and demand are not independent. Finally, and most importantly, the human decision-making process cannot be dissociated from the relevant unit of control. Each of these insights requires further detail.

The above-given example illustrates well why the scarce nature of a productive factor is a necessary condition for the existence of economic rent – the transfer price of a productive factor from one use to another. However, it may not be intuitive why a worker's wage can also enjoy rent or how the

same happens to the entrepreneur's profit. When a worker is allocated to a given professional activity and enjoys a salary, leaving personal preferences aside, the individual will ask for a higher wage to change employer. The difference between this new salary and the current one is economic rent. Following the same reasoning, and as put by Joan Robinson in her mandatory book "Economics of Imperfect Competition," "*the necessary minimum for an entrepreneur is the level of earnings which is sufficient to prevent him from relapsing into the ranks of employed labour*" (Robinson, 1933, p. 103). Hence, if an entrepreneur keeps his or her firm active it is likely that a portion of the total profits being grabbed encompass economic rent. Economic rent is likely to exist in every economic activity and it does not constitute in itself any peril to society's overall welfare.

The link between the scarcity of a productive factor and the amount of rent it can grab is of great relevance to understanding the type of opportunistic behavior that fosters. On one hand, positive opportunistic behavior is spurred when trade activities occur. An agreement between the parties is performed just as long as a win-win situation is identified. On the other hand, negative opportunistic behavior looms out when measures to increase the scarcity of a productive factor are allowed in society. For instance, consider that a governmental permit is required to allow a new firm to start the business. In this case, it is plain that the current firms, already in the market, are enjoying economic rents. The existence of the economic rent is a social good for it is attracting new firms to an economic activity where they are needed. In this example, rather than the economic rent inherent to abnormal profits, it is the regulatory system that resorts to a governmental permit that is harmful to society's well-being.

Money brought to human society the capacity to change the dynamics of its production according to the existing broad needs and regardless of individual tastes or preferences. In the example of the individual who was raising cabbages on his or her piece of land, the person can not provide a different use for that material resource unless possessing the know-how to do it. If the land owner knows nothing about the accommodation business and/or does not enjoy engaging in that activity, then society would never delight in a new hotel facility in that location. However, this social improvement becomes possible because the use of money paves the way and combines with the safeguarding of property rights and individual autonomy. Otherwise, each participant in the trade would remain in their prior activities. And the fulfillment of society's needs would be standing still.

The contribution of money to a dynamic society where welfare improvements become the norm is irrefutable. Nonetheless, the use of money creates a permanent fluctuation in the prices of goods and services that often go beyond the understanding of the average citizen. As we know from the Value Function, humans are risk averse and exhibit a strong preference for security. Consequently, the average citizen wants to enjoy the ability to acquire the goods and services of his or her preference, at the same price, for that it is the only way of making sure that the same quantities can be bought. However, when the land owner stops producing cabbages for self-consumption and starts looking for them in the market, he or she is contributing to an increase in the demand for cabbages and inducing an increase in their price. Conversely, the new hotel will stress the price of accommodations down and the entire society will be enjoying the possibility of resting in that location at a better price than elsewhere. The dynamics of aggregate supply and aggregate demand are not independent of each other in a society that uses money to make transactions easier.

These are all important notions for their relevance to understanding the impact of the regulatory system on society's overall welfare. The efficiency of any regulatory system depends on its effects on the targets of the law. To be of economic relevance, the targets of the law are units of control. In the example presented above, the land owner is one unit of control while the investor in the accommodations business is another unit of control. However, if the government is enforcing a

prior governmental permit to enable the trade agreement, then the government becomes nothing else but a source of disturbance. In this instance, the government claims to be at the service of the entire population, but the investor in the accommodations business cannot consistently pay the \$900 rent to the land owner unless the hotel is providing higher revenues, coming from the services delivered to society. The land owner will never give up using the land to raise cabbages unless he or she perceives a gain from the trade and the remaining members of society ensure the production of cabbages that he or she needs. Hence, the land owner and the investor are, herein, units of control, for they can say “YES” or “NO” to the transaction. In this instance, governmental permits cannot consistently contribute to overall welfare improvement, nor are they unanimously accepted.

However, the sources of disturbance can come from non-governmental sources such as the industry, employer associations, unions, environmental activist associations, financial institutions, and others of a similar nature that might impede or unbalance the free agreement between two units of control from being realized. This means that competing interests are on the table, a fraction of society is trying to overcome the remaining members, and there is no unanimity regarding accepting the status quo. Economically, a given regulatory system is efficient when it is unanimously embraced by society. Otherwise, not only does it risk its contribution to overall welfare, but it further endangers creating the conditions for negative opportunistic behavior to thrive.

An entity is playing the economic game as a unit of control when it can define the conditions of price and quantity at which it engages in an economic transaction. It is important to note that, under this definition, the employer associations, the unions, and even an industry, all might become a unit of control, replacing their members in this function. By this token, the role of the government is to harmonize units of control, releasing their freedom to engage in positive opportunistic behavior while inhibiting negative opportunistic behavior. It is therefore crucial to understand how the decision-making process of each unit of control evolves when value is sought, why is government monitoring required, and how can the government raise a regulatory system that spurs proper opportunistic behavior while being unanimously accepted.

Retrieving the interest of the accommodations business investor in the cabbage raiser’s land, we know that an agreement will be settled when a win-win situation is reached between the two trade participants. A winning position means that both participants perceive that, to end up better, they want to perform the trade rather than avoid it. To the cabbages raiser of our example, things are clear. He or she knows that the annual amount of collected cabbages has a monetary value of \$100. Moreover, the individual disregards the need to acquire cabbages in the market for he or she is already resorting to outsources to get other goods and services. However, we must consider that he or she enjoys cultivating vegetables and quitting its production entails a disutility to the person. Hence, in this scenario, the minimum amount upon which the trade provides a winning situation starts at \$100 plus the value of the disutility that will be felt by being precluded from continuing cultivating the land, which, for the sake of simplicity, we can attribute a value of another \$100.

To the investor, the problem is quite similar. On one hand, the investor knows that he or she will be entitled to a much higher revenue than the value of the cabbages cultivated in that land during one year. According to the total amount of the expected annual revenue, reduced from the remaining operating costs and the business return that is being targeted, the investor knows where is the maximum amount that can be paid for the land’s rent. Each unit of control knows its starting price - the one that leads to a winning situation. The seller identifies his or her minimum sell price while the buyer settles his or her maximum buy price. Both participants ignore their opponent’s price limit and aim at the highest possible value from the transaction. The difference between the price limit of buyer and seller is the control units’ gain inherent to the tug-of-war game that arises from the trade.

Participants in the trade agreement see themselves as antagonists and focus on the tug-of-war game spurred by the trade, for they perceive that the gain of one side is the loss of the other. The cabbage raiser perceives that he or she is losing value if agreeing on a rent of \$400, where he or she feels that it might be winning \$200 only while being possible to settle on an annual rent of \$1,000 or more... Similarly, the investor also understands that the interest of the other party is opposite to his or her own. Hence, buyer and seller compete to capture the biggest portion of the available gain in the trade.

To find the fair value for this negotiation, the parties could write down their limit values on a separate piece of paper while having previously agreed that the full gain of the transaction would be evenly split between them. Afterward, and simultaneously, they could reveal to each other their limit price and settle an annual rent equal to the lowest value written down by the seller plus half of the reckoned trade's gain. By this line of reasoning, the parties would cooperate in good faith. However, this possibility is doomed to fail due to negative opportunistic behavior. In reality, each participant would start bidding the value thought to be closer to the opponent's price limit to grab the maximum possible gain inherent to the trade. If they lie to each other, each one is willing to review their price limit and start the process again until they end up in an agreement. The outcome will depend on several circumstances such as negotiating power between the parties and personal proclivities, and often, does not correspond to the fair division of the trade's gain.

It is interesting to identify how a process of writing down both price limits can be improved to inhibit negative opportunistic behavior. For the process of writing down the price limit to have a chance of being effective in evenly splitting the trade's surplus between the two participants, it would be necessary that they had previously agreed on conceding to each other only one opportunity. This rule, unanimously accepted, means that the cost of not doing business bears on the shoulders of each participant in the negotiation if they lie and settle their price limit outside the other party's monetary boundary. In this instance, since they both want to perform the trade and avoid the cost of not doing it, they are induced to write down their true price limit.

This oversimplified example cannot correspond to the regular functioning of an economy because, in society, the number of potential buyers and potential sellers is often greater than one. Within our example, an assumption far closer to what happens in the real world is that the investor has previously spotted several possible locations to build the hotel and engaged simultaneously in sensing a few purchasing possibilities before closing any deal. In this case, whenever the cabbage raiser is aware of other landowners with the potential to build the hotel, he will be prone to give up a portion of the trade's gain. When many sellers compete with each other for the gain inherent to a trade, we may be in the presence of a supply curve. Analogously, we can identify a demand curve when many buyers compete with each other for a trade's surplus welfare. Hence, when money is a transaction tool, the regular functioning of an economy is composed of units of control and sources of trade disturbance, each acting opportunistically, either in a positive or negative mode, to capture value.

The human decision-making process is fine-tuned to look for the best possible alternative to reach a given goal. Although it is easy for any person to conclude that he or she aims at identifying the best alternative among the available ones, we are not born with this full capacity. Quite conversely, by trial and error attempts and/or educational processes we learn how to think regarding any given more complex matter.

We start the analysis of the decision-making process of a productive unit of control by assuming that it is the only one in the market and sells its production to a multitude of buyers that are

heterogeneous among themselves. Since this control unit faces no competition, it is acting under a monopoly. In this instance, the first worry in the mind of the firm's owner is how much the unitary cost of each produced unit, for it needs to ask for a higher sell price to score a gain in each sale. To do this, the entrepreneur reckons the sum of all costs incurred and divides this result by the total quantity of the final product. The monopolist's first worry is knowing how much the product's unitary average cost is.

The monopolist's second worry is to look for improvement opportunities to score higher profit deals. Since profit is secured, for the firm is the one who defines the product's sell price and everything that is produced is certain that it is going to be sold, the entrepreneur chiefly focuses on opportunities to lower the product's average unitary cost. Consider that the entrepreneur finds a new worker who he or she hires from another industry. This new worker possesses a specific skill that enables a significant increase in production. However, this new worker also costs a higher wage and requires some new work infrastructures to be effective. In this instance, the manager hires this employee whenever the proportional increase in the final production (or total revenue) is higher than the rise in total costs. These additional changes in both costs and output (revenue) are marginal values. The entrepreneur increases his or her productive capacity just as long as the increment in the marginal costs does not override the rise of the marginal revenue.

The definition of average and marginal values is crucial to fully understanding their effects on the regular functioning of an economy. Marginal values are the ones that define the course of a society's welfare because they set up opportunistic behavior. Note that average values are always the outcome of a static decision-making process. For instance, the product's average unitary cost is always the outcome of total costs divided by total output and the firm's average unitary revenue is always the result of the ratio between total sales and output sold. However, marginal values are the ones that induce a change by creating the opportunity to score a gain. And the opportunity might exist whether the firm's marginal costs are rising, falling, or remaining constant.

Table 2. Example of rising marginal costs

Units of Output	Average Cost	Total Cost	Marginal Cost
10	20	200	-
11	21	231	31
12	22	264	33
13	23	299	35

Source: Based on Robinson, J. (1933) "The economics of imperfect competition"

Table 3. Example of falling marginal costs

Units of Output	Average Cost	Total Cost	Marginal Cost
10	20	200	-
11	19	209	9
12	18	216	7
13	17	221	5

Source: Based on Robinson, J. (1933) "The economics of imperfect competition"

Table 4. Example of constant marginal costs

Units of Output	Average Cost	Total Cost	Marginal Cost
10	20	200	-
11	20	220	20
12	20	240	20
13	20	260	20

Source: Based on Robinson, J. (1933) "The economics of imperfect competition"

Tables 2 to 4 present rising marginal costs, falling marginal costs, and constant marginal costs. The three situations can occur within any business depending on the evolution of the firm processes and technologies.

If marginal cost is greater than average cost, average cost must be rising. The addition of a unit above the average necessarily leads to an increase in the average of a given set. Conversely, if marginal cost is less than average cost, average cost must be falling. And if marginal cost is constant, average cost is also constant.

The first subtlety that arises from the analysis of marginal costs and average costs comes from the situation where marginal costs are falling until a certain point after which marginal costs start rising. This scenario is quite likely to happen in the real world for several reasons. For instance, we may think of the use of a machine that requires a significant amount of power just to be activated, leading to a continuous decrease in unitary costs as long as the production of output goes on. This same machine must be continuously operated by a worker whose performance declines as time goes by due to exhaustion. In cases such as this one, marginal costs start by exhibiting a falling stage that inverts after reaching a given level of production, leading to a U-shaped curve if we represent the marginal costs in the space (Q, P). This leads to the existence of a locus of rising marginal costs and falling average costs that require the close analysis of every firm's manager. When marginal costs begin rising, managers might be tempted to hold production. However, despite having a situation where marginal costs are rising, it is still possible to reduce the average costs by increasing production just as long as the marginal costs remain below them. Table 5 evidences this locus of rising marginal costs and falling average costs.

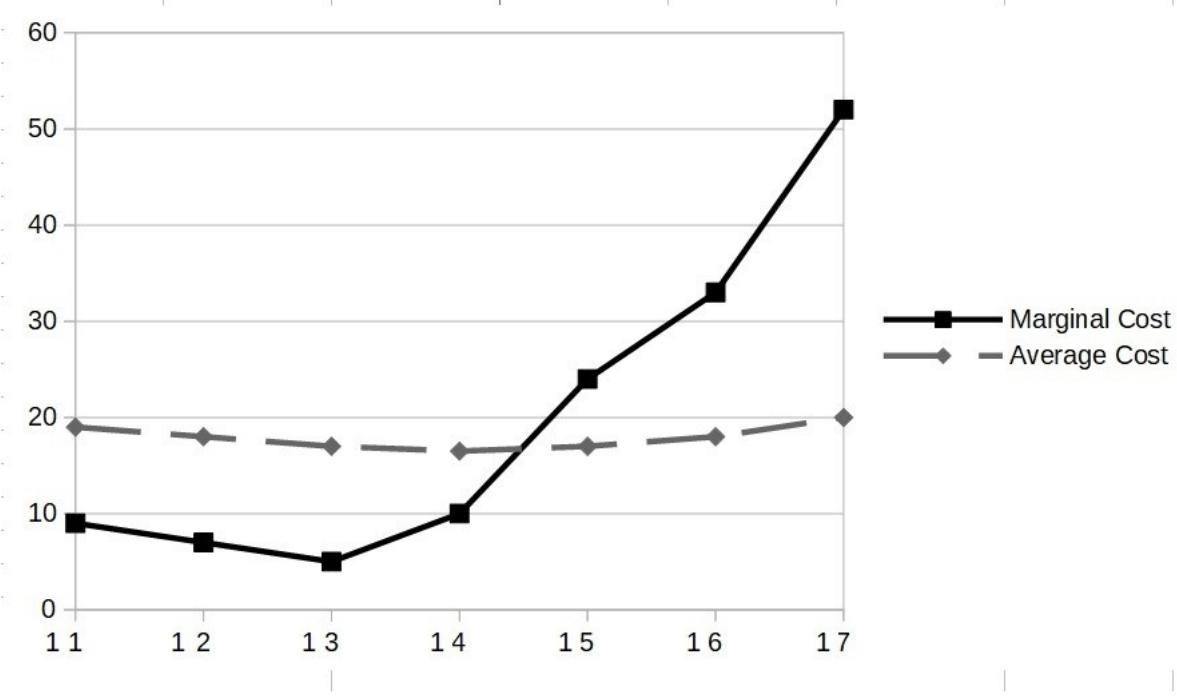
Table 5. Locus of rising marginal costs and falling average costs

Units of Output	Marginal Cost	Total Cost	Average Cost
10	-	200	20
11	9	209	19
12	7	216	18
13	5	221	17
14	10	231	16.5
15	24	255	17
16	33	288	18
17	52	340	20

Source: Author's own creation

Figure 5.

Tabel 5's representation of marginal and average cost curves



Source: Author's own creation

In this example, notice that, from producing 13 units of output to 14 units of output, there is a locus of rising marginal costs and falling average costs. Figure 5 illustrates how the two curves evolve against each other, highlighting that, in situations such as this one, the marginal costs curve cuts the average costs curve at its minimum.

Table 6. Marginal revenue and average revenue

Units of Output	Price	Total Revenue	Average Revenue	Marginal Revenue
10	36	360	36	-
11	34	374	34	14
12	32	384	32	10
13	30	390	30	6
14	28	392	28	2
15	26	390	26	-2
16	24	384	24	-6
17	22	374	22	-10

Source: Author's own creation

The impact of the marginal cost in the management decision-making process is always dependent on the simultaneous marginal changes in revenue, for it is impossible to get a gain when the marginal cost is increasing more than the marginal revenue. If the addition of one more unit of a productive factor does not translate, at least, into the same marginal increase in the firm's revenue, then the entrepreneur will not go on with that increase in productive capacity. Table 6 exemplifies the reckoning of both average and marginal revenue under a market behavior that is common to find due to the existence of budgetary restrictions, where a decrease in the selling price allows for an increase in the quantities sold.

It is important to outline that the average revenue is given by the selling price when the producer does not engage in price discrimination between different markets.

Now, if we compute the amount of profit that it is possible to collect from the production and sale of a given output, in a given period, we can identify what is the optimum production from the entrepreneur's point of view.

Table 7. Profit maximization

Units of Output	Price	Total Revenue	Total Cost	Total Profit
10	36	360	200	160
11	34	374	209	165
12	32	384	216	168
13	30	390	221	169
14	28	392	231	161
15	26	390	255	135
16	24	384	288	96
17	22	374	340	34

Source: Author's own creation

Table 7 puts into perspective the conjunction of Tables 5 and 6 main data. The firm maximizes profit by producing and selling the quantity where marginal cost equals the marginal revenue. In this example, since we are dealing with non-divisible units of output, we identify that by producing 13 units of output we have a marginal revenue of 6 (see Table 6, marginal revenue when selling 13 units), while recording a marginal cost of 5 (see Table 5, marginal cost when producing 13 units). However, the total profit is given by the difference between the average unitary revenue and the average unitary cost, multiplied by the traded quantity ($169 = (30 - 17) \times 13$).

This managerial decision is not the same as minimizing unitary costs or maximizing unitary revenues. Further inquiring about the numbers of our example, Table 8 illustrates a reminiscence of the profit maximization process by outlining the evolution of the difference between average revenue and average cost according to the evolution of the quantity produced and sold in a given period.

It is worth highlighting that the entrepreneur who maximizes profit does not minimize costs, for if it were so, in our example, he or she would go for the production of 14 units instead of 13. Moreover, the entrepreneur that maximizes profit does not maximize revenue. Finally, as evidenced in Table 8, the entrepreneur who maximizes profit does not maximize the difference between average revenue

and average cost. The entrepreneur that maximizes profit maximizes the difference between total revenue and total cost. This is always accomplished when marginal cost equals marginal revenue.

Table 8. Reminiscence of profit maximization

Units of Output	Average Revenue (AR)	Average Cost (AC)	AR-AC
10	36	20	16
11	34	19	15
12	32	18	14
13	30	17	13
14	28	16.5	11.5
15	26	17	9
16	24	18	6
17	22	20	2

Source: Author's own creation

This is sheer human behavior seeking value in a society that uses money to facilitate trade activity, regardless of the opportunistic nature that it may acquire. When an entrepreneur develops a technique, or a machine, or finds any productive discovery that enables him or her to produce a higher quantity of a given good at a lower cost, the invention is going to be put into practice only if it is possible to increase the total revenue that the entrepreneur will be entitled to. If so, the entire society will be enjoying a higher number of goods at lower prices. If the money in circulation in the economy does not change, then the product's selling price must be decreased to fit the consumers' budgetary restrictions. Generally, the use of human creativity to enable a reduction in the costs of production is positive opportunistic behavior, for everybody is living better the more the other citizens replicate this behavior in society. But is this seek for value always beneficial to overall welfare?

The entrepreneur safeguards self-interests only. Accordingly, he or she reduces costs whenever a profitable opportunity is in sight, i.e., just as long as marginal revenue decreases proportionally less than marginal costs do. By this token, whenever the entrepreneur discovers a way of replacing a productive factor with a cheaper one, he or she will not miss the opportunity to do it. In our global society, firms will replace human work with a machine whenever it is understood that this opportunity arises, regardless of the fate of their employees. In this instance, two different things might happen: 1) the dismissed employees, replaced by the machine, will find an alternative use for their work efforts real soon; and 2) the dismissed employees will not replace immediately their productive capacity, and the entire aggregate demand of the economy is going to shrink. Since it is necessary that people be free to act upon the foreseen opportunities, and the entrepreneur needs to do it to keep the firm in business, the two situations require further inquiry.

When a firm can replace some workers for a machine at a gain, regardless of the reduction of production costs, society needs to ensure that these persons will quickly find an alternative use for their productive capacities. If this is so, three positive consequences are happening at once. First, society is enjoying a higher quantity of the goods produced by the initial firm at lower prices. Second, the increase in the supply of new goods brought out to the market by the alternative use that the dismissed employees were able to find is an additional source of more products at lower prices. In this case, the dismissed employees will keep their purchasing power, and the demand that is directed toward everything produced in the economy is kept steady. And third, resources are being used more efficiently, since higher output quantities are being reached using the same total

quantities of the productive factors. If society is organized in such a way, the dismissal is positive to society, and everybody, without exception, ends up enjoying more products at lower prices.

However, the entrepreneur's marginal revenue can only be safeguarded by society members. Rather than machines, only people make buying decisions. When those employees are unable to quickly find an alternative use for their work efforts, they will not keep their purchasing power, and firms will risk facing a decrease in the marginal revenue bigger than the decrease in costs that they have just managed to reach. The higher the number of firms acting in the replacement of human beings for a machine, while these workers stay unproductive, the higher the society's possibility of being engaged in negative opportunistic behavior, for everyone will be living worse the higher the number of firms replicating this behavior.

The notion that profit is maximized when marginal cost equals marginal revenue is at the core of opportunistic behavior in a market society. It is a building block of Normative Economics because it is impossible to raise a proper regulatory system without ensuring that opportunities are taken positively while inhibiting negative opportunistic behavior. As we have just seen, and every economist is quite aware, it is not simple to raise a regulatory environment where each person safeguards individual interests while precluding themselves from negative opportunistic behavior. Yet, that is exactly what must be accomplished.

It is important to outline that the occurrence of acts of corruption becomes easily understandable once one realizes that profitable opportunities come out of any situation where marginal costs can be less than marginal revenues. An entrepreneur might be increasing a little bit of his or her total costs by providing payment to an entity that, in turn, will endeavor to make sure that the entrepreneur will get an increase in revenue that overcomes the cost of corruption. The eradication of negative opportunistic behavior, such as the one inherent to the proliferation of corruption, can not be successful by punishing the offenders, as a penalty-based regulatory system aims to. The eradication of negative opportunistic behavior in general, and corruption particularly, requires that the benefits that offenders are trying to collect become useless to them. This is an approach provided by a benefit-based regulatory system and, as we shall see, demands that society looks at these matters using a slightly different lens.

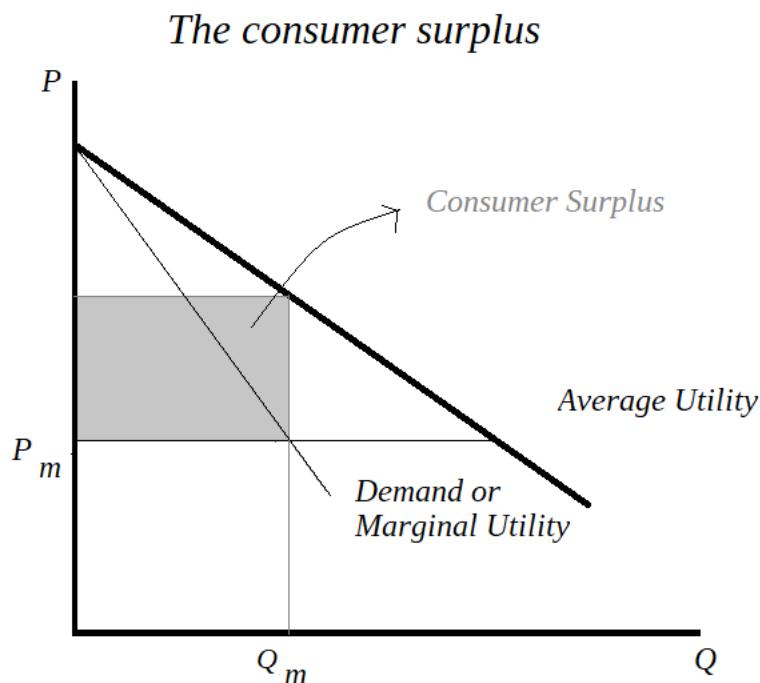
Retrieving our example of the investor in the accommodations business who is managing to build a hotel on the cabbage raiser's land, we understand that the reward of society comes from using a given resource according to its most valued use. Society needs to enjoy a hotel in that location (or so it is thought by the investor) but the land owner is unable to fulfill that need (or does not want to). General people will be glad to pay for the hotel services as long as the joy brought to them is higher or at least equal to the disutility of paying for this delight. Similarly to what happens to the entrepreneur, the consumer also decides to buy a good or service just as long as the marginal utility that is perceived overcomes the price that is paid. The difference between the price paid for a good or service and the satisfaction felt by its consumption is the consumer's reward. The main reward that society collects from economic activity is the consumer surplus.

Representing the aggregate sum of society's consumption utility in the space (Q, P) makes sense once we resort to money to facilitate the exchange of goods and services among us. First, since money has a finite quantity distributed among the population to facilitate economic transactions, the higher the number of quantities of goods and services available, the lower must be their price. Hence, in the space (Q, P) each pair of this curve corresponds to the reduction in price required by society to accept an increase in the quantity produced and the curve is heading downward from left to right. Consequently, the aggregate demand curve is the same as the curve of society's marginal

utility obtained by consuming the produced quantities. Geometrically, from the marginal utility curve, it is easy to derive the society's average utility curve. If this is a straight line, it is easily shown that the marginal utility curve intersects the line of price halfway between the P-axis and the aggregate average utility curve. Joan Robinson's work provides a precise and simple explanation of this fact (1933, p. 30). Whether the curve has concave or convex shapes, due to the downward slope that it exhibits, the average utility curve is always above the marginal utility curve. Figure 6 illustrates the consumer surplus for a given quantity produced.

In the face of the above, it is plain that the maximum price at which a given transaction can occur is ultimately defined by the buyer. The demand curve can be seen as the market's maximum price indicator. Due to its contribution to identifying the best regulatory system to safeguard overall welfare, this notion becomes a very strong foundation of Normative Economics.

Figure 6.



Source: Based on Robinson, J. (1933) "The economics of imperfect competition"

Intuitively, it is easy to recognize that every person is getting better with the cheaper available products. Figure 6 is simply a geometric way of representing it. However, this carts great importance to Normative Economics. Note that while only some of us are entrepreneurs who maximize profit, others are owners who maximize rent, and many are workers who aim at the highest possible wage, every single person is a consumer. Hence, overall welfare is measured by the consumer surplus and it is the consumer surplus that our society needs to maximize.

The market price P_m identified in Figure 6 is the outcome of the multiple interactions of the existing producers in society. If the producers are in a significantly high number, such that each one cannot sell anything else unless it lowers the price of his or her product, then the market is, admittedly, in perfect competition. Suppliers have been forcing each other to lower their sell prices until total revenue equals total costs. In this case, each entrepreneur is withdrawing a normal profit that is just enough to prevent him or her from choosing an alternative of being another entrepreneur's

employee, and, analogously, no employee is thinking of quitting the current job to engage in entrepreneurship. If P_m , the weighted average price of every good and service consumed in the economy is chosen this way, then Q_m is the weighted average quantity produced where marginal costs equal P_m . If this is so, society is being efficient in the production of Q_m for it is not possible to increase the consumer surplus given the existing technology. In this instance, entrepreneurs are collecting their normal wages, the firm's account profit is zero, and the marginal cost curve of society's aggregate supply equals the minimum of society's aggregate average costs curve.

The importance of the consumer surplus to human behavior cannot be underestimated in a society that uses money to facilitate economic transactions. Its existence defines the reward that channels human behavior when an economic agent decides to engage in an economic transaction. Hence, it is by understanding how individuals act to grab the highest possible portion of the consumer surplus that a proper regulatory system can be adopted. Herein, “proper” stands for a unanimously accepted set of rules that contributes to maximizing overall welfare. And it is irrefutable that humans act permanently in a quest for value.

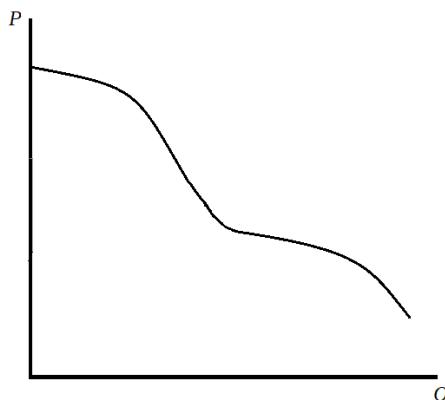
The existence of a demand curve requires that multiple buyers will be competing for the acquisition of a given good or service, each holding a given budget constraint. When consumers are heterogeneous among themselves, the demand curve faced by producers often exhibits multiple waves in its downward slope. As put by Joan Robinson, this might happen when there are several groups of consumers, each with different levels of income (1933, p. 57). Figure 7 illustrates this scenario.

Analogously, the idea that it is possible to conceive an imaginary supply curve in the space (Q, P) is also a matter requiring inquiry.

We know that each firm produces a given quantity where the marginal cost of producing that quantity of output equals its marginal revenue. Hence the firm changes the quantities supplied to the market every time consumers change the quantity demanded for a given price level. Following the profit-maximization goal, firms either increase or reduce the quantities supplied according to the equality between marginal costs and marginal revenue. Therefore, it is somehow illogical to imagine the existence of a supply curve in the space (Q, P) when we know that producers adjust the quantities supplied according to changes in the demand they are facing.

Figure 7.

Demand under consumers' heterogeneity



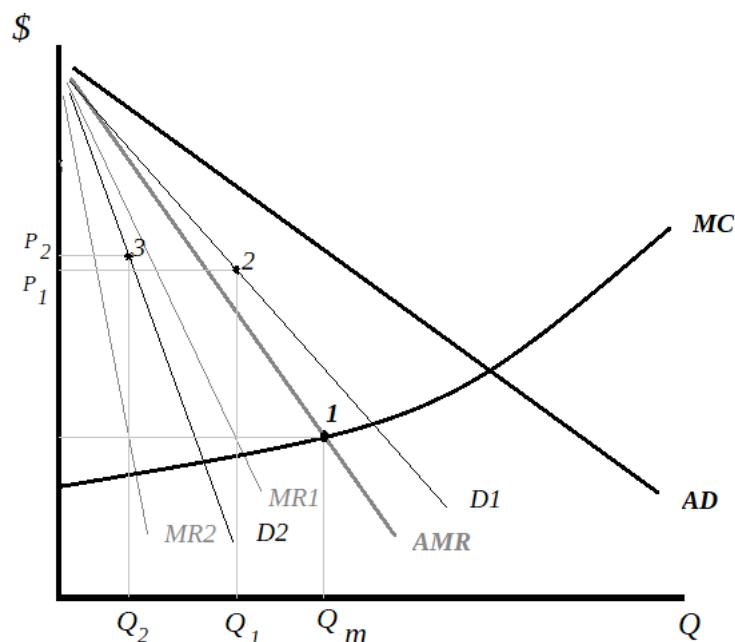
Source: Based on Robinson, J. (1933) “The economics of imperfect competition”

The conception of a supply curve that represents the pairs (Q, P) required by the entrepreneur to keep his or her firm going, only makes sense under a situation where these pairs (Q, P) are the ones where the firm's profit is normal. In this instance, the entrepreneur is withdrawing from the firm's activity the wage required to prevent him or her from quitting entrepreneurship and becoming a regular laborer working for someone else. This is an important notion for two reasons that are worth to be outlined. Firstly, when a monopolist firm sells in different markets, it will discriminate its product's sell price and adjust the quantities sold in each market according to the relationship between the firm's marginal costs and each market's demand curve. And secondly, the conception of an economically meaningful supply curve, as an indicator of the maximum quantities that can be brought to society at the lowest possible price regardless of the existing demand, requires a specific regulatory environment that cannot accommodate full freedom to engage in profit maximization practices. Below, these two reasons are going to be carefully inquired for they are paramount to understanding how the normative economic environment contributes to overall welfare.

The lack of logic in the concept of the existence of a supply curve under monopoly is most easily understood by analyzing the producer's decision-making process to take advantage of the opportunity of selling in two different markets. From the producer's point of view, markets are different when the buyers of one market do not compete with the buyers of the other market to acquire the same product or service. When markets are separated, the monopolist produces the quantity of output where its marginal cost equals its marginal aggregate revenue. But each market presents its demand curve. The monopolist settles a selling price in each market where the marginal cost of the quantity produced equals the marginal revenue presented by each demand curve. Hence, in each market, the producer presents a given pair (Q, P) where the chosen quantity and sell price are not completely independent.

Figure 8 illustrates the monopolist choices of (Q, P) pairs when selling in two different markets.

Figure 8. *The monopolist's choice under price discrimination*



Source: Based on Robinson, J. (1933) "The economics of imperfect competition"

In Figure 8, the curve “ $D1$ ” represents the demand in Market 1 while the curve “ $D2$ ” represents the demand in Market 2. “ AD ” represents the aggregate demand curve faced by the monopolist. This curve is the result of summing the quantity demanded in markets 1 and 2 for each level of price. Analogously, “ AMR ” stands for the aggregate marginal revenue curve while “ $MR1$ ” and “ $MR2$ ” stand for the marginal revenue curves in each market. The monopolist firm is going to deliver the output where its marginal production cost equals its marginal revenue. This is accomplished at point “1”. Consequently, the monopolist decides to produce the quantity Q_m and distribute it between markets by selling Q_1 to market 1 and Q_2 to market 2 ($Q_m = Q_1 + Q_2$). The selling price of Q_1 is given by Market 1’s demand curve at P_1 . The monopolist proceeds analogously regarding market 2. Points “2” and “3” identify the pair (Q, P) of markets 1 and 2, respectively, that are chosen by the selling firm. It is plain that, in this example, a change in the demand curve in one market will affect the monopolist’s supply of the good in the two markets. Consequently, the monopolist firm does not exhibit a supply curve for one market and a supply curve for another one, according to its cost structure. The monopolist firm decides the quantity offered in each market according to its interest in profit maximization and solely attends to the selling price that is possible to ask in each market simultaneously.

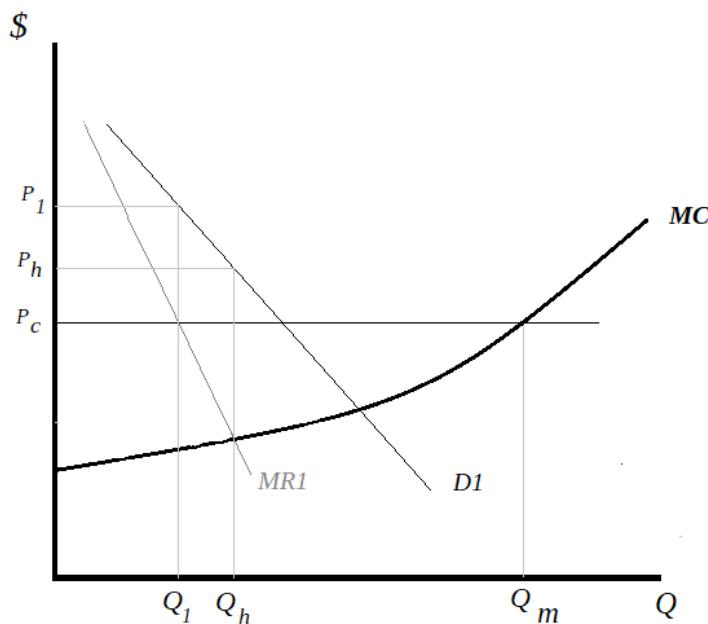
It is possible to identify an extreme case that clarifies the impact of the regulatory system on economic behavior. Consider a special case where the firm is selling in two markets, but being a monopolist in one market and facing a perfectly competitive market in the other. As put by Joan Robinson (1933, p. 184) regarding the monopolist, “*this might occur if one market was his home country, and the other a foreign country where his produce was in competition with local rivals.*” In this instance, the marginal revenue in the foreign market equals its market price, because, under perfect competition, the firm is unable to sell a unit whatsoever to a foreign citizen while asking for a marginally higher price than the one already settled there. Hence, the firm will produce the quantity that equals the price settled in the perfectly competitive market. However, the produced quantity is going to be distributed according to the demand curves exhibited by each market. First, since it is possible to ask for a higher price at the home market (otherwise the entire production would be sold abroad), the monopolist firm identifies the quantity where its marginal cost hits the marginal revenue possible to get. Second, the remaining output that is still available will be sold in the away market. This example is insightful about the contribution of the regulatory environment to overall welfare when it can foster positive opportunistic behavior. Specifically, if above-normal profits are being recorded in the economy, society must possess the capacity to create firms in the industries where they are most needed, raising a highly competitive economic environment.

Figure 9 highlights this importance. The first decision of the firm in this example is to produce the quantity Q_m where marginal cost equals marginal revenue. Afterward, in market 1, the home market, the firm will sell the quantity Q_1 at price P_1 . In a perfectly competitive market, the firm will sell the quantity $(Q_m - Q_1)$ at the price P_c .

Notice that things change if the firm does not dispose of a perfectly competitive market where to sell its products. If this firm could not sell abroad, then it would choose to produce quantity Q_h while selling its output at price P_h . The possibility of selling abroad enables the monopolist to increase the quantity produced and this decision has a positive impact on the quantity-price (Q, P) pairs of the factors of production in its home country. It is irrefutable that the improvements in productivity of a foreign firm provide an important contribution to increasing the quantity of goods and services available in the home market if the foreign firm is freely allowed to sell its products in any market.

Figure 9.

The special case of the monopolist selling abroad



Source: Based on Robinson, J. (1933) "The economics of imperfect competition"

The existence of full freedom to engage in profit maximization practices embraces two possibilities of opposite effects in society. On one hand, there is a positive effect on society's ability to maximize its consumer surplus whenever the existence of above-normal profits fosters the entry of new firms competing in the market and leads to a decrease in the selling price of the products and services available while contributing to increasing the overall output. On the other hand, from the monopolist firm's point of view, profit gets higher the bigger the room that society provides to preclude competition from growing. By this token, to society, the amount of products available is kept on hold while having to bear higher prices. This practice leads to worsening the monopolist's welfare if replicated by other producers in society and, accordingly, it is negative opportunistic behavior. The freedom to engage in profit maximization practices knows its limits when it endangers overall well-being. And, it remains clear that the effects of spurring positive opportunistic behavior in one particular local market do not limit themselves to that specific location if economic agents are free to take the available opportunities. Hence, profit maximization practices are crucial to economic development but society must be able to keep them under a positive-driven opportunistic mode.

The analysis of the profit-maximization process leads us to understand that every monopolist is a monopsonist in the markets of the productive factors. It is possible to conceive a monopolist who is the sole seller of a given product or service while resorting to the suppliers of raw materials and labor skills that also sell among several other industries. However, if the producer is the only seller in a given free market then that must require the possession of some know-how and level of specialization specific to the monopolist productive technology. Accordingly, the monopolist must be the sole buyer of that fringe of resources specific to his or her way of production. At least to some extent, the monopolist is also a monopsonist in the factors' market.

When an economic agent is seeking value, the decision-making process is settled toward the search for equality between marginal gain and marginal loss, and this effort is persistent while marginal

cost is less than marginal gain. In the particular case of a monopsonist, the marginal loss is given by the increase in cost when an additional unit of the productive factor is acquired while the marginal gain is given by the marginal productivity of that productive factor. The monopsonist will increase the use of a given factor of production while the marginal productivity is higher than its marginal cost. Hence, the relevant quantity of a given productive factor that is sought by the monopsonist depends simultaneously on the value of the productive factor's marginal productivity and on the cost that the monopsonist must incur to acquire an additional quantity of the productive factor. Hence, it is somewhat illogical to consider the existence of a monopsonist's demand curve.

If we conceive the demand curve as the set of pairs in the space quantity-price (Q, P) that identify the maximum price that buyers are willing to accept to acquire a given quantity of the good or service then several motives highlight the nonexistence of a true demand curve under monopsony. First, the set of buyers is composed of one single element. Hence, the bid-price that this single buyer is willing to offer to the sellers to acquire an additional quantity of the productive factor is as low as possible, and it does not derive from the necessity to compete with other buyers for acquiring that good or service. Second, from the monopsonist's point of view, in the space (Q, P), each pair represents the average net productivity of the productive factor, i.e., the set of average total value the monopolist can get from using that quantity of the productive factor. Accordingly, the only way to make sense of the conception of a monopsonist's demand curve is when the productive factor is heterogeneous and its average net productivity decreases as long as one additional unit of it is brought into the production activity. Otherwise, the monopsonist would always acquire the quantity of the productive factor where its unitary cost equals its productivity and the chosen pair (Q, P) is solely derived by the monopsonist's cost structure. It is worth noting that the demand that the firm is facing in its sell market has an impact on the demand for the productive factors if the goods are non-durable. Finally, besides the requirement of heterogeneity in the productive factor, the conception of a monopsonist demand curve only makes sense when the monopsonist average cost is rising with the increase in the use of the productive factor for if it is not so, the monopsonist wants to acquire every additional unit of the productive factor. If the productive factor average productivity is always higher than its marginal cost then the monopsonist wants to use every available unit of the productive factor for it cannot be scarce. Hence, the conception of a demand curve under monopsony is quite peculiar. Figure 9 illustrates the pair (Q, P) chosen when the productive factor exhibits heterogeneity regarding its units' productivity and the monopsonist's cost structure is rising.

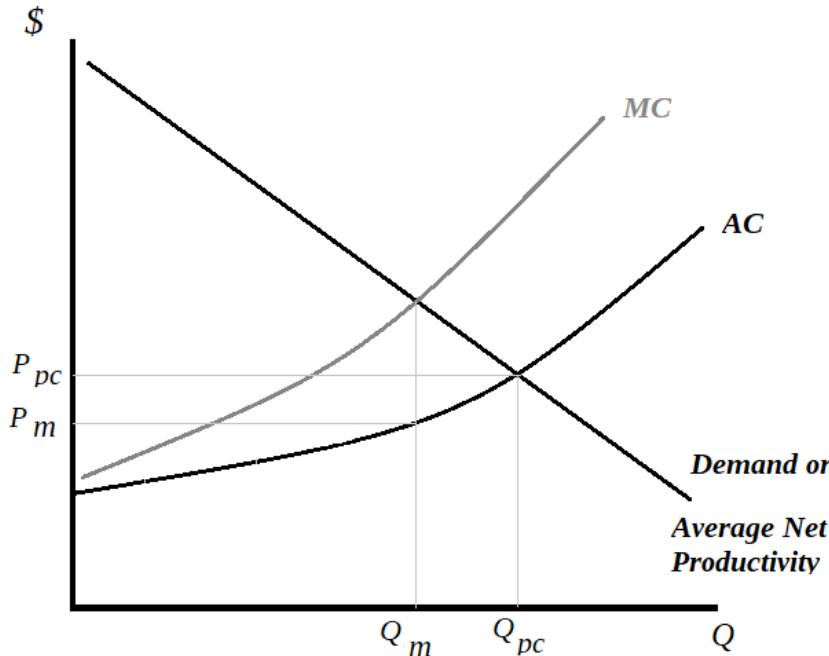
In Figure 10, the pair (Q_m, P_m) represents the monopsonist's chosen quantity of the productive factor according to its average net productivity. The monopsonist pays only P_m to its supplier because it is enough to acquire the quantity Q_m . The pair (Q_{pc}, P_{pc}) stands for the average net productivity levels and quantity of the productive factor that would be reached if the market were in perfect competition, i.e., if every producer shared the same cost structure.

A special case of monopsony that leads to an equilibrium as shown in Figure 10 can often be identified in the labor market. Indeed, the labor market is heterogeneous for each person is a unique combination of personal profile, skills, and knowledge endowment. Moreover, rising costs in a free market are present because the monopsonist is induced to increase the wage of the existing workforce when hiring a new employee at a higher wage. And the monopsonist needs to increase the wage per unit of work if he or she wants to increase the number of working units. Apart from quite specific frameworks where a deviation from the norm might happen, the majority of the worldwide workforce demands a higher reward to deliver additional work efforts. In Figure 10, the curve AC identifies the pairs (Q, P) where Q is the number of labor units the market is offering to a given wage paid, P . Thus, the curve AC identifies the full employment levels in the economy.

Hence, in a society where the regulatory system allows the existence of a monopsony in the labor market, it is impossible to reach a stage of full employment in the economy.

Figure 10.

Peculiarities of the monopsony's special equilibrium



Source: Based on Robinson, J. (1933) "The economics of imperfect competition"

The capacity of a society to reach a full-employment situation is further compromised when it is possible to replace the work of a man with a machine. In this case, the producer maximizes his or her profit by using the productive factor that either, enables to reach cheaper productive costs, represents an increase in overall produced quantities, or both. Accordingly, following a profit-maximization-driven rationale only, the producer does not care about what is happening to the dismissed workforce for it is a priority to him or her to ensure the survival of the firm. Hence, the producer exchanges the units of productive factors among themselves whenever it is proportionally advantageous.

Whenever it is interesting to identify the proportion that one variable will change in response to changes in another, we are in the presence of the concept of elasticity. For instance, in the above-mentioned case of the substitution of a portion of the labor workforce for an increase in the use of machines, it is crucial to know how an additional use of a given additional percentage of machines will lead to a percentage decrease in the overall workforce. In this case, we may be considering the elasticity (ε) between labor (l) and capital (k). This can be mathematically represented as follows:

$$\varepsilon_{l,k} = (\Delta l / l) / (\Delta k / k), \text{ where } \Delta \text{ represents the absolute variation of the variable.} \quad (4)$$

Hence, if the elasticity labor-capital thus defined is such as $\varepsilon_{l,k}=2$ then an increase of 10% in the use of machines will lead to a decrease of 20% in the use of human workforce. The concept of elasticity is at the core of opportunistic behavior since it decisively impacts the structure of cost-benefit faced by the decision-maker. In this case, the example focuses on the producer's decision, but the concept

equally applies whenever a person has to choose between two different alternatives, under a given set of perceived circumstances.

It is crucial to outline the importance of the concept of elasticity to the legislator, for society is not fully aware of the deepness of its scope. Two chief reasons magnify the understanding of the concept of elasticity when it is required to raise a regulatory system that safeguards overall welfare. First, it is irrefutable that the human quest for value never ends. Accordingly, whenever an opportunity to seize value is identified, the human being goes for it. In an economy that uses money to facilitate the exchange of goods and services, that happens when there is an opportunity to proportionally increase gains more than losses. Second, since society needs to be able to take advantage of the available opportunities to thrive, the legislator must have in mind, not only the thrust that the governmental action is going to give in society but also how the strength of the effect impacts the economy. Hence, being aware that the legislator's actions have consequences and knowing their extension is paramount.

Above, I have considered the case of a machine replacing a man. Nonetheless, there are situations where the deployment of industrial facilities creates workplaces. In this case, conversely, to the one above, an increase in the use of capital will lead to an increment in the use of labor. Therefore, it is clear that the effects of regular economic activity might acquire a positive or negative sign, according to the nature of the situation under analysis.

Geometrically, considering a bi-dimensional space, the relevant elasticity depends on the curves' slope, location, and the exact starting point for the analysis. Figure 11 illustrates this specificity. In the space (x, y) , curves A and B are both downward sloping but register different levels of elasticity according to the exact starting pair we may choose in each one. Particularly, for a given level of x (or y), the curves evidence a different result for the elasticity.

The process of calculus in equation (4) can be translated into a mathematical limit when we want to consider infinitesimal variations of the variables. Therefore, we can rewrite the reckoning of the elasticity "y-x" as

$$\varepsilon_{y,x} = (\delta y / y) / (\delta x / x) \quad (5)$$

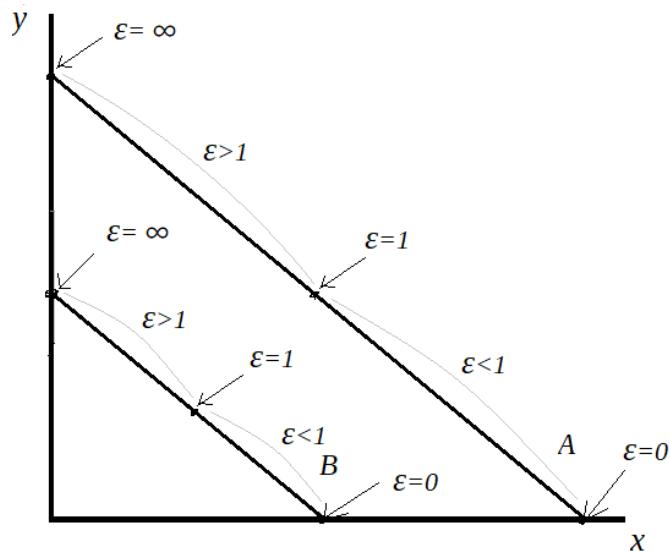
which is the same as

$$\varepsilon_{y,x} = (\delta y / \delta x) / (y / x). \quad (6)$$

Hence, if we consider x as income and y as the good's demanded quantity demanded, then, as outlined by Alfredo de Sousa (1988, p. 55), it becomes plain that "*the elasticity is the quotient between the marginal value and the average value.*"

Figure 11.

The elasticities of linear curves in the space (x, y)

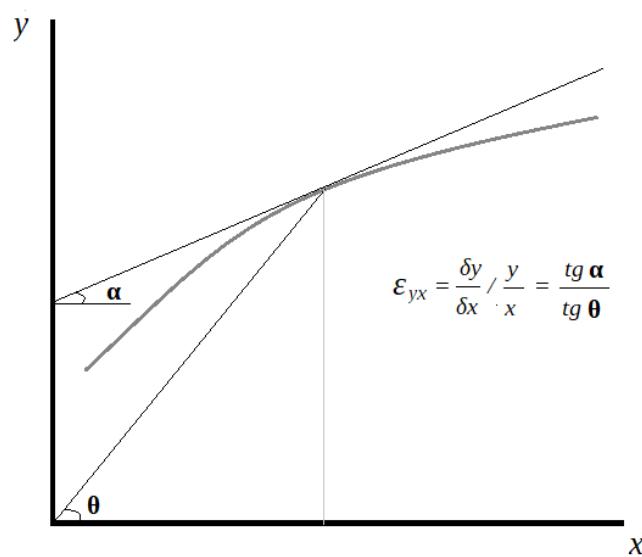


Source: Based on Robinson, J. (1933) "The economics of imperfect competition"

In a bi-dimensional space, another way of resorting to math to reckon the elasticity at a given point of the curve is illustrated in Figure 12. It is uncommon to compute the value of the elasticity of a curve by resorting to trigonometry, but it is a useful process to magnify that it varies along the curve while outlining how marginal and average values relate to each other. And we know they are at the core of the economic decision-making process.

Figure 12.

Reckoning elasticities using trigonometry



Source: Based on Sousa, A. (1988) "Análise económica"

Hence, the response given by an economic variable “ y ” to a change in another economic variable “ x ” depends on the shape, location, and the exact starting point of the economy. Notice that if a demand curve happens to exhibit a shape as illustrated in Figure 6, knowing the exact location of the economy before introducing an artificial change is mandatory. If society aims at using statistical data to identify the shapes and elasticities of the curves of demand, supply, consumer utility, and cost structures in their multiple interactions, then, if successfully done (i.e., providing an acceptable statistical significance), this methodology always will be presenting an *ex-ante* result dependent on historical data. Accordingly, it can only be of assistance if there are no technological changes during the period of gathering data. But the assumption that overall reality remains unchanged across time is often missing empirical support. And, if manipulation is going to occur, society must be worried about *ex-post* results. It is, therefore, plain that the human manipulation of economic variables affects the regular functioning of a society and cannot be previously anticipated with accuracy.

The idea that firms are continuously seeking to maximize profit by increasing cost while its marginal value remains inferior to the marginal revenue that stems from it, depends on the prior assumption that firms know their costs and how they relate with their potential revenues. However, empirically, and consistently across time, society watches the existence of firms facing bankruptcy. Consequently, it is irrefutable that, often, there are firms that either, do not know their cost structure, cannot evaluate properly their marginal revenue, or both. Regardless of the reasons that justify a firm failure, it is relevant to be aware that, when it comes to deciding on a given matter that requires a higher level of knowledge and understanding, humans learn how to think, tend to seek the optimal, but are often satisfied with a second-best solution.

Note that a firm has tremendous difficulty knowing the demand for its products and services unless it is a monopolist. Hence, in a free market, an assumption far closer to reality is that firms know their cost structure and settle their sell price according to some sort of markup strategy or desired profit margin. Afterward, this profit margin is adjusted according to market changes and managers' perceptions of them, which regard either changes in consumer preferences or movements perpetrated by the remaining producers in the industry. These difficulties and market behavior lead to a very important awareness of the actual state of the economy under our current regulatory system.

The decision-making process cannot be disregarded from the regulatory environment where it evolves. Currently, worldwide, firms are more or less free to decide upon the quantities of the productive factors they choose to use, and are more or less free to settle their products' sell-price. Moreover, worldwide, firms are more or less unable to know the demand curve directed toward their products and services.

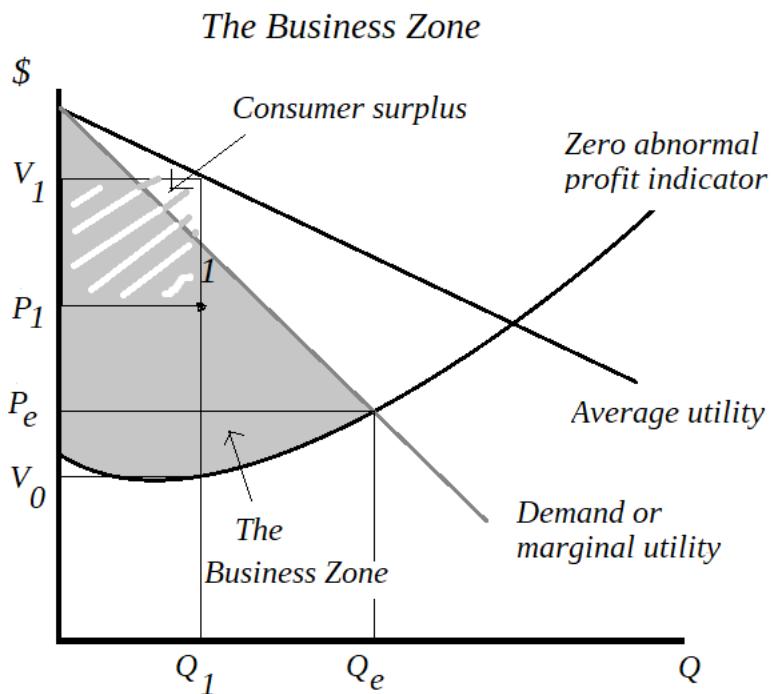
Consider that, in the space (Q, P) , we can draw an aggregate demand curve of the economy that represents the quantity-price pairs of the evolution of consumers marginal utility, given the amount of money in circulation and its distribution among citizens (i.e., given the consumers' budget). By the same token, consider that, to a given level of production, we can aggregate the weighted average cost of firms. Hence, for every given quantity produced, we can identify the quantity-price pairs where the weighted average producers' sell-price delivers the normal profit (i.e., the profit level just enough to keep the entrepreneur going on with his or her business rather than opting to be an employee for someone else). In this case, the aggregate supply becomes the indicator of zero abnormal profit. Finally, consider that the firms' cost structure is falling in the early stages of production – due to both overhead costs and increasing specialization opportunities along with the rise in output – but costs are increasing in the higher stages of production due to the increase in the price of the scarce factors of production that will then be facing a more intensive use. Under these

considerations, a question becomes mandatory: If we represent the aggregate supply and demand curves thus defined in the space (Q, P) , under our current economic environment, how can we tell where is the economy right now?

In this instance, the effort to find an educated guess related to a given economic reality must encompass, at least, three steps. One, we need to identify the total market value available in terms of the number of consumers and their individual purchasing power, for the shape of the aggregate demand curve depends on it. Two, we need to look at how the firms' overall cost structure exhibits scale economies. And three, we need to conclude if the level of profits recorded in a given period is normal.

This same exercise applies equally well at the firm level of a specific market niche. Figure 13 illustrates society's effort to identify its current economic stage, whether at a macro or micro economic level. If we consider that the entrepreneur's normal profit is what he or she earns from engaging in economic activity, then the normal profit can be accounted as the entrepreneur's wage. By this line of reasoning, the supply curve represents the quantity-price pairs where the firm's abnormal profit is zero. However, worldwide, it is possible to identify firms who exhibit, year after year, "huge" profits, where "huge" is unanimously considered as abnormal profit (or, put it in another way and under a concrete definition, a level of profit that strongly entices other entrepreneurs to enter the industry).

Figure 13.



Source: Author's own creation

In Figure 13, for simplicity but without any loss of generality, I consider a linear demand curve because it is geometrically easier to derive the average utility that it represents. Note that if the average curve is linearly represented in the space (x, y) , where x stands for the horizontal axis and y stands for the vertical axis, then the marginal value can always be found halfway between the curve of the average values and the vertical axis. In the space (Q, P) , and in a society that uses money to

facilitate economic transactions, the demand curve always is downward sloping due to the existence of the budget constraint. This procedure also makes it easier to identify the consumer surplus. Given the existence of abnormal profits, we remain to identify if it is possible to increase the selling price even more for a given output. This is the same thing as evaluating if society would risk facing a higher product price if the industry were reduced to one single firm. This exercise, which is not too far away from reality, leads us to conclude that the worldwide economies are far from a healthier equilibrium and live in the gray zone signaled in Figure 12 as the “Business Zone”, i.e., the full area that lies below the demand curve and above the zero abnormal-profit indicator. The exact point of the “Business Zone” surely depends upon the type of scale economies that firms are reaching and the negotiating power possessed by buyers and sellers.

Note that the consumer surplus depends on the exact sell price settled for a given quantity. For instance, if the seller can choose the quantity-price pair defined by point “1” then the inherent consumer surplus becomes perfectly identified by the rectangle marked with stripes (given by $(V_1 - P_1)Q_1$). It is impossible to have deals priced above the demand curve, for buyers will not perform that trade. Although it is possible to perform a trade below the line of zero abnormal profits, it is highly unlikely because the seller will record a loss, and it is surely impossible to do it consistently over time.

In Figure 13, the value given by $Q_1 V_0$ represents the payment of every productive factor cost, including both the workforce’s and the entrepreneur’s wages. The value reckoned by $Q_1(P_1 - V_0)$ represents the abnormal profit that the producer can retrieve from market activity. We can consider the abstraction given by Figure 13 in terms of macroeconomic data, taking each pair (Q, P) as the economy’s weighted values.

Regardless of the true shapes of the curves, this level of abstraction is useful to realize that human society cannot rest satisfied with the level of welfare currently delivered to its members. Firstly, the consumer surplus is far from being maximized. Secondly, overall welfare is not as big as possible. Thirdly, the economic units, buyer and seller, are unable to find a way of stabilizing between them the distribution of the economic welfare that comes out from the economic transactions. And fourthly, society is unable to grant a full-employment reality and is currently leaving some of its members in total misery.

Figure 13 provides a very important illustration of the incentive that our current regulatory system provides for negative opportunistic behavior. Specifically, the consistent location of the economy at a place such as the one given by point “1” means that the economic regulatory system is inadequate to deliver overall welfare. Since the human decision-making process depends on a gain-loss evaluation, the persons who are enjoying the huge abnormal profit recorded in the economy do not accept losing their dominance. These persons are always looking at the market entry of new competitors as a threat that comes in and “burns the market” by forcing them to sell at lower prices. Hence, these people have a strong incentive to develop efforts to control the economic environment and prevent every increase in competition. The more these efforts are perpetuated, the more point “1” moves left and upward, and the worse are everyone’s living conditions, including these producers. Ultimately, society will reach a medieval reality, where the quantities of goods produced are distributed in society by the single owner of the means of production according to his or her whim. Figure 13 further illustrates that the state of economic development or decay depends on how opportunistic behavior is driven into a positive or negative mode.

Governments, usually under a four-year mandate, intend to protect the less well-off citizens by resorting to a variety of measures. These measures tend to interfere with the regular functioning of

the decision-making process between buyer and seller that are aimed at providing immediate results. Significant examples are the enactment of a legal framework that prevents firms from dismissing employees, the settlement of maximum prices in some goods or services, the requirement of the issuing of a governmental permit to engage in an economic activity, the decision on the customs tariff system, or the concession of subsidized opportunities to either buyers or sellers of something – such as the offering of a wide range of services of safety, justice, education, and health care, or the issuing of money to grant the firms of very specific market niches to deploy the type of investments that the government defines. And governments have been legitimated by society to do it.

Society's acceptance of all of the above-mentioned measures embraces the concept that individual freedom is not enough to channel opportunistic behavior into a positive mode. And, as we have seen thus far, this is a correct concept because humans engage in either positive or negative opportunistic behavior according to the individual perception of the gain-loss relationship that is available. However, it is fairly impossible to accurately identify where is the economy and properly interfere in the individual decision-making process. It is irrefutable that, no matter the econometric processes that we may use, it is impossible to identify what are the elasticities of supply and demand curves, what are the shapes of the cost structure faced by every producer, or what are the preferences, tastes, and satiety points of every consumer. Moreover, it is impossible to predict what is the next major technological change. Hence, it is somewhat illogical to accept any governmental interference in the private domain decision-making process. In other words, our global society is currently convinced that the level of welfare that is being enjoyed depends on each government's competence, while competence is confused with the idea that the government knows what is doing when interferes with the economy. Indeed, the competence of a government is identified by the stability that it can provide to its citizens to freely engage in their decision-making process while enacting an overall regulatory system that channels opportunistic behavior into a positive mode. And this is the only thing that is mandatory to consecrate individual freedom worldwide.

It is irrefutable that governments are crucial economic agents, but society needs to be aware of the proper scope for its action. Every economy wishes to reach the point where the business zone is eradicated, and the economy reaches a pair (Q, P) where the curve of zero abnormal-profit indicator cuts the aggregate demand curve as in Figure 13. If this was successfully done, it would be said that the economy would be perfectly competitive because it would have the number of firms required to produce the highest possible quantity of goods and services at the lowest possible price, and no consumer would wish to acquire any single unit of output at an infinitesimal increment in price. The requirements that are necessary to reach this state of affairs provide an important contribution to understand how can a government function as a unit of stability, rather than as a unit of disturbance.

A perfectly competitive economy has several attributes: 1) in any given industry (or market niche) every firm shares the same cost structure and sells the product at the same price; 2) no existing firm is powerful enough to decide to reduce the quantity offered in the market while increasing the product's sell-price; 3) there is no incentive for entrepreneurs to leap between industries, for all industries provide a similar return; 4) consumers know exactly what they are purchasing and they immediately opt for a cheaper product when facing products or services that are perfect-substitutes; and 5) once a firm can reduce its cost of production the remaining firms in the market will follow through. These attributes require further inquiry.

In a perfectly competitive market, firms of a market niche sell their products at the same price for they could not sell a single additional unit by asking a higher price. However, under this competitive reality, the firm has a strong incentive to ask for a slightly lower price to capture the

entire market to itself. If this happens, then the remaining firms in the market will also adjust downward their sell-price. The incentive to proceed with further price downsizes extinguishes when the price equals the firms' average cost curve. If the cost structure differs between firms, then the firms with the higher cost structure cannot sell anything and go bankrupt. Hence, if the economy manages to reach a perfectly competitive equilibrium then all firms of a given market niche share the same cost structure and sell their product at the same market price.

The second point stems from the shared cost structure between firms. Suppose that, despite the market price being fixed at a given level, the quantity produced and sold is distributed among the existing firms. Moreover, suppose that one firm is much bigger than the others and can produce a higher quantity of output. Finally, suppose that this big firm decides to put its production on hold (or storehouse), while delivering to the market fewer quantities of output, making the product rare with the intention of asking for a higher sell price. Since the product sold by this big firm is the same as the other firms in the industry, the remaining firms will be sought out by the big firm's clients and will increase production to face that opportunity. Hence, in a perfectly competitive market, no firm is powerful enough to decide on reducing the quantity offered in the market while increasing the product's price.

In a perfectly competitive market, the prices of the goods are given to the buyer and seller and the same happens concerning the prices of the productive factors (inputs). Each entrepreneur uses the inputs that exhibit a profitable relationship between marginal productivity and marginal cost. When it is possible to exchange the use of an input that has become expensive for another that is cheaper, the entrepreneur takes the opportunity. But, in a perfectly competitive market, the prices of the goods and services are given and the marginal cost is the same as the average cost. To the entrepreneur, the elasticity of substitution between inputs is always settled at the point where the input's marginal productivity fairly compensates its relationship with its average cost. Consequently, since the entrepreneur knows exactly these relationships, then it is impossible to give up on one industry to enter another and grab a gain, for profitability is reduced to the normal profitability in every possible economic activity. When the prices of all inputs adjust within a free market open to the individual decision-making process, then there are only normal profits, and the overall welfare society can produce is fairly distributed across society through wages.

In a perfectly competitive market, there are no deceptive activities. Note that firms aim at capturing a higher number of potential customers by modifying the product features (which is the same as trying to achieve a greater degree of monopoly), reducing sell prices, and/or resorting to advertising (Sousa, 1988). Certainly, there are other techniques used by firms to secure the market demand. Let us consider this framework. Within this scenario, we know that the selling price is given and, therefore, changing it is not an option for entrepreneurs. Hence, engaging in the modification of the product by offering new features to capture an additional market niche will be a successful decision if the new product's features are important to the consumer. In this instance, the firm will be a monopolist in its market niche, capturing above-normal profits. This profit will attract firm entries into this just-created market niche and the process proceeds until the price of this new product equals each firm's average cost and the economy returns to the normal profit situation. However, if through misleading advertising, the new product does not match consumers' expectations, the firm ruins its reputation and the loyalty of its customers is lost. The firm becomes doomed to disappear. Hence, deceptive activities do not represent an opportunity to grab a gain.

In summary, a perfectly competitive society exhibits several interesting attributes. First, since the firm's cost structure is fully disclosed, a system of patent and copyright protection does not fit. Technological improvements are readily disclosed and society benefits from more advanced

solutions as soon as possible. Second, since there are only average costs, the entire range of inputs available are all used, including the labor workforce. Hence, in a perfectly competitive economic environment, there is always a full-employment situation. Third, the adjustments in the use of every productive factor are immediately made according to the identification of the opportunity to do so. Therefore, society grants individual freedom to the economic units. Fourth, because all industries provide the same return and the entrepreneur's profit level is nothing else than his or her well-deserved wage, banks have an easier life regarding the decision-making process on credit operations. Fifth, information is perfectly disclosed to society. And, sixth, in the perfectly competitive economic environment it is not profitable to engage in deceptive activities. Ultimately, the perfectly competitive economic environment is the pinnacle of the success of cooperative efforts between the entire society.

Our society uses money to facilitate trade. Gains are perceived in monetary terms and the decision-making process of the control units, buyer and seller, must be free to seek the opportunities that best favor both parties. The only way a government can act as a source of stability, rather than precluding economic agents from acting freely, is by enacting an enabling regulatory system that fosters overall welfare by stimulating the scope for positive opportunistic behavior while inhibiting negative opportunistic behavior. In other words, the challenging work of every government is to find out how to improve cooperation among society rather than trying to fix imbalances that it is unable to properly understand.

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6- The Economics' fundamental equations

Introducing money to facilitate economic transactions immediately gives rise to the definition of prices – i.e., the terms of exchange between any two goods. Irving Fisher (1911) insightfully outlines that total expenditure, E , is the outcome of the total quantity of money available in the economy, M , multiplied by the number of times that money changes hands to perform an economic transaction in a given period, V . Thus $E = MV$ and $E = \sum p_i q_i$, where i stands for product i , p is the product i average price, and Q is the quantity of product i that is traded. Accordingly, the author poses that E/M is the velocity of circulation of money and, therefore,

$$MV = \sum p_i q_i. \quad (7)$$

Equation (7) can be rewritten by denoting P as the weighted average of all p_i and T as the total number of economic transactions that occurred in a given period. Hence, we can write

$$MV = PT \quad (8)$$

This equation establishes both the foundations for the quantity theory of money and the unbreakable bond between the money market and the market for goods and services. Furthermore, during the 20th century, and due to different ways of looking at the four components of the equation, either as a variable or as a parameter, this equation has consolidated itself as the source of all controversy among economists. Plainness can be brought out by understanding how inflationary fears have been established across society over time.

We need to keep exploring equation (8) to figure out if their components must be treated as variables or parameters. Besides M (the quantity of money in circulation) and P (the weighted average of all prices), equation (8) is also composed of T (the number of transactions in the economy) and V (the velocity of circulation of money). It is, therefore, paramount to verify if T and V can change on a continuous base, for these can constitute another source of inflation. The argument often used to refute the quantity theory of money is that both T and V are highly volatile. It is widely accepted that the velocity of the money's circulation can change for several reasons such as technological novelties (like the creation of new means of payment), firms' varied levels of investment across time, and many others. However, it is plain that these changes cannot increase indefinitely. Hence, even though the instability of both T and V can lead to unavoidable and welcome adjustments in P , the truth is that both T and V cannot increase forever. Yet, the quantity of money, M , can. Hence, unless we stop manipulating the quantity of money in circulation, M and P are our variables while T and V are our parameters.

Our current economic system enables the monetary authorities to manually interfere with the amount of available money in circulation. This interference has been widely studied by Economics. Gary Gorton and Ping He pose that “*changes in bank credit allocation, sometimes called “credit crunches,” appear to be an important part of macroeconomic dynamics*” and are “*procyclical*” (2008, p. 1). Regardless of the mechanism a central bank uses to manipulate the quantity of money in circulation, economists always focus on the effects of these actions to foster overall welfare.

Equation (8) can be rewritten considering what V and T encompass. The number of transactions of the economy, T , depends on the total quantity of goods traded, Q , which can be expressed as $Q = \sum n_i q_i$, where $n_i q_i$ is the total number of transactions of product i during a given period. Thus, $MV = \sum p_i n_i q_i$, for $MV = PT$. Let N be the weighted average of all economic transactions. Then

$MV=N\sum p_i q_i$. Hence, $MV=NPQ$. Notice that if the quantity of money is kept steady then $M=\sum p_i q_i$ and $V=N$. Accordingly, without loss of generality, equation (6) can be written as

$$M=PQ \quad (9)$$

Equation (9) removes from the analysis the redundancy inherent to the fact that if the number of transactions increases during a given period, then the velocity of the amount of money that changes hands also increases. However, this can only be true if M is kept steady. Equation (9), where $P=M/Q$, further outlines that it is possible to have an increase in P caused by a decrease in Q , highlighting the danger of having an economy exhibiting inflationary pressures under an economic crisis reality where produced quantities are declining. Conversely, if society is working properly toward maximizing overall welfare, i.e. producing more goods and services to fulfill society's needs, then every increase in Q leads to a decrease in P . Hence, overall welfare can be improved without money market manipulation through sheer productivity improvement.

Equation (9) emphasizes when economic development occurs. Note that overall welfare improvement is always, and only, a consequence of society being able to increase the quantities of products available, Q , which leads to a decrease in their weighted average price, P , if keeping the quantity of money in circulation, M , unchanged.

Equation (9) also highlights that, in an economy where the quantity of money is not manipulated, the money's purchasing power is set by the pricing system. Hence, artificial interference in the monetary system necessarily disturbs both the market for goods and services and the labor market.

Finally, equation (9) outlines that the continuous creation of new money to grant consumer credit is a source of economic inefficiency for it unbalances the three economically meaningful markets – the money market, the market for goods and services, and the labor market – and is nothing else but an inflation builder.

However, when the creation of new money is directed toward granting investment credit only, the increase of money in circulation does not have to take a continuous character over time. We can state that inflation refers to a continuous widespread increase in prices in an economy, where "continuous" and "widespread" are very important remarks. Thus, all else equal, a discrete increase in the money available in the economy cannot create inflation. Notice that $P=MV/T$ and by raising M in one single moment we can only get one single adjustment of P . Furthermore, when the investment succeeds, it increases the quantity of available products at lower prices. Research has already shown that the eventual wide perception of a continuous price increment vanishes in society when not followed by the persistent creation of new money (Alvarez, Beraja, Gonzalez-Rozada, & Neumayer; 2019).

Money is used in society for three reasons only: 1) to consume goods and services; 2) to deploy productive facilities; and 3) to save for the uncertain future ahead. These three reasons are easily understood given how humans seek to capture value. Similarly, John Maynard Keynes (1936) states that people hold money for three motives only: 1) to make trades easier (the transaction motive); to engage in riskier opportunities (the speculative motive); and 3) as a reserve for the future payments (the precautionary motive). Accordingly, the money available in an economy is fully used for these three motives. Hence, we can write that

$$M=C+I+S \quad (10)$$

Moreover, equation (10) subtly illustrates the effect of uncertainty in conditioning economic behavior. If society can withdraw uncertainty from the people's minds then productive processes such as "just in time" methodologies increase its success and the economy, eventually, will be able to evolve to a reality where $M=C+I$. Note that this is the only situation where the income of an economy equals its expense and, necessarily, this is an awkward scenario because humans have a natural propensity to protect against the effect of uncertainty. In the 1990s, Christopher D. Carroll and his colleagues, namely Robert E. Hall and Stephen P. Zeldes (1992) have shown that consumers exhibit a buffer-stock behavior due to future income uncertainty and preference for present consumption over future one. The works of Christopher D. Carroll (1997, 2001) highlight that the consumption function adjusts according to a buffer-stock effect in which people tend to save more when their income decreases and, departing from lower-income levels, the author has shown that there exists an effect of impatience that leads consumers to increase consumption in response to a rise in people's income. In 1936, John Maynard Keynes noted that the propensity to save increases in society when the income rises. Hence, prior economic theory followed the idea that consumption propensity would tend to fall as long as the economy thrives. Conversely, Carroll *et alia* have shown that human behavior does not follow a regular consumption pattern. The way human opportunistic behavior occurs impacts economic balance in a way that does not necessarily follow a linear pattern and, while it is not random, it is not fairly steady either. Hence, equation (10) allows the governmental entities to understand the effects of a regulatory system that reduces uncertainty in the institutional environment.

Finally, equation (10) is fundamental to Normative Economics due to the accrued understanding brought by its decomposition. This step is crucial for the deployment of the most disparate economic measures and the prior comprehension of their effects. Consequently, it becomes particularly relevant to the governmental decision-making process.

From equation (9), we know that $M=PQ$. Accordingly, we can write that

$$M = P_{ci}(Q_c + Q_i) + P_s Q_s \quad (11)$$

where P_{ci} is the weighted average price of the goods produced in the economy that are going to be used for either consumption or investment purposes, P_s is the weighted average price of the goods produced in an economy that are going to be saved for future use, and Q_c , Q_i , and Q_s are the quantities of goods produced in a given period.

Equation (11) provides additional clues to understanding the pillars of society's welfare. Considering the second member of the equation, for money is the only good available in society that cannot be consumed or be used directly to produce other goods and services, we can note that the first portion indicates the overall value of the market for goods and services, and the second portion indicates the overall value of the money market, where Q_s stands for the quantity of money in circulation that is being saved.

When an economy engages in the production of import goods, export goods, consumer goods, investment goods, or new money, the effects of the quantitative variations introduced in the economy will reflect accordingly in the price system under a relationship given by equation (11). Hence, having previously identified the society's proportional propensity to consume, invest, and save, the governmental decision-maker can forecast the outcome of producing such movements in the economy.

Equation (11) outlines that there are three meaningful markets to understand the economy of a society that uses money to increase its trade efficiency: 1) the market for goods and services; 2) the labor market; and 3) the money market. Since humans behave opportunistically to capture value it is, therefore, required to further inquire into the human interactions occurring in the economic markets.

7- Market behavior of an economy that uses money to facilitate transactions

A free market is one where the decision-making process of every economic affair is left loose to individual judgment. Hence, the interference of a governmental entity aiming at fostering positive opportunistic behavior, either inhibiting or eradicating negative opportunistic behavior, is a task that presents itself as a significant challenge. Rather than imposing a given directive that must be obeyed by the economic agents, the regulatory system needs to assist the individual decision-making process in the production of personal options that reinforce each other when put together. It cannot be done unless the governmental entity is previously aware of how economic agents seek value regardless of its assistance.

The essence of a thriving society lies in its capacities for production and distribution. Hence, prosperity depends upon how transactions take place among society's members. When walking around the three macroeconomic meaningful markets – the market for goods and services, the labor market, and the money market – to understand how human opportunistic behavior acquires a positive or negative nature, one needs to inquire about the behavior from the two sides of a trade and identify the disparate possible proclivities of both buyer and seller. Every economic agent is a value-seeking entity. The consequences of how the economic game is played become prominent.

Despite this being an approach targeted by economic research, at least since the beginning of the 20th century, it has always been done while considering the economic environment has a steady ecological system that can be improved through a few discrete political measures. The empirical and theoretical investigation has proceeded, following the detailed analysis of important microeconomic idiosyncrasies while looking at macroeconomic events as the sheer outcome of the millions of interactions among the economic agents. Unfortunately, this has led mankind into a narrowed mindset of trying to minimize difficulties rather than fixing the problem. Due to our human unavoidable loss aversion, the focus has been on eliminating or minimizing the macroeconomic effects of negative opportunistic behavior produced by individuals. That is, instead of aiming at building an economic environment that consistently fosters positive opportunistic behavior, economic research has been conducted to the sheer observation of the phenomena of negative opportunistic behavior and the unambitious goal of reducing its effects on society.

Herein, in the realm of Normative Economics, it is crucial to identify how opportunistic behavior relates to the Value Function because, rather than forcing human behavior into a given behavioral path, the goal is, instead, to create the regulatory system upon which individual choices positively reinforce each other. The subtlety lies in the fact that, as illustrated in the above-mentioned economic game, humans engage in competitive behavior when they cannot foresee the opportunity cost of doing it. Hence, cooperative efforts can only occur when a mutual benefit is unanimously perceived. However, the economic research developed until now has accepted that competitive behavior is the norm and that the governmental entity can only develop actions to minimize negative opportunistic behavior. And this is a very reductive perception of what society can do.

One example of the itemized advances of economic research regards the knowledge acquired on the effects of monopsony power. Specifically, worldwide, several legal frameworks have been produced over decades targeting the negative opportunistic behavior emergent from this identified economic problem; but the problem has not been fixed yet. This is a striking result that must escape from the sphere of economic research and be brought out into the awareness of our global society.

Perfect monopsonies happen when one individual entity is the single purchaser of goods and services offered by a wide number of potential suppliers. Regardless of the many reasons that might

lead someone to enjoy such a formidable situation, when an entity is the sole seller of a manufactured product that incorporates goods and services previously produced by someone else, this economic agent is in a possible position to be the single buyer to many potential outsourcing suppliers of productive factors. Therefore, it is quite natural that every monopoly can easily enjoy monopsony power as well. And, according to the Value Function, this carts severe consequences to the entire negotiation process inherent to every economic transaction in a free market.

It is well understood that the effects of monopoly power might easily extend to the labor market. The monopolist might become the single contracting entity of a specific skillful type of employee, impacting the functioning of the labor market. Research has proceeded with analyzing this type of market imbalance in negotiation power, at least, since 1933, when Joan Robinson published her influential work titled “The Economics of Imperfect Competition.” Recently, Allan Manning, in a very interesting literature review on monopsony in labor markets concludes that “*the bottom line from these studies is that there seems to be a large amount of monopsony power*” (2020, p.4). Hence, understanding why society’s regulatory systems could not solve the problem yet is a pertinent and actual matter.

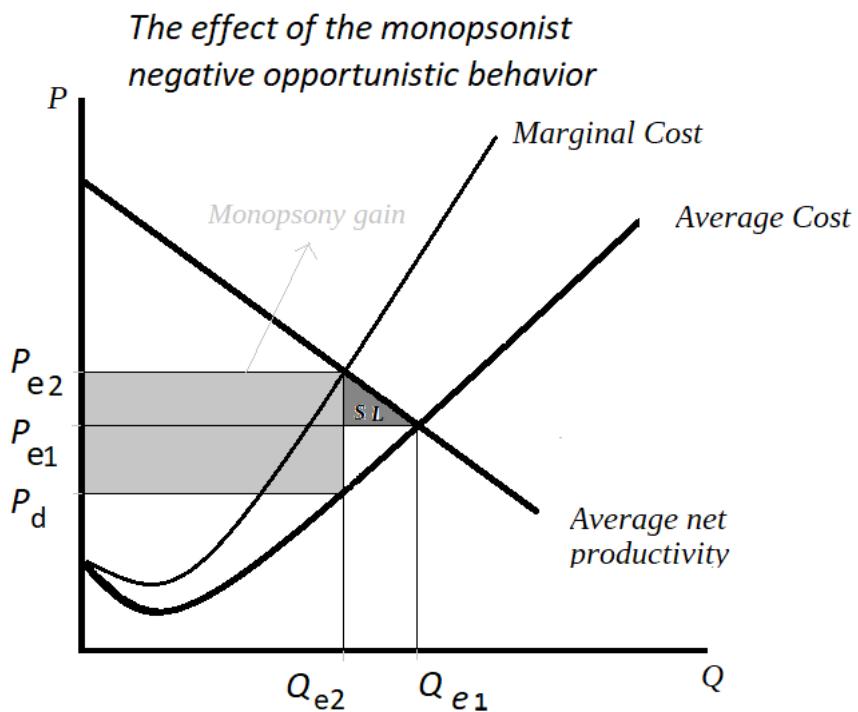
Antitrust laws have been produced worldwide to limit the market power of any particular entity. However, humans use creativity to seek value, and the effects of our opportunistic behavior on overall welfare are still very harmful when they acquire a negative nature. Hence, given the shape of the Value Function, one of the first intriguing questions that emerge from studying the effects of a monopsony power position is to quantify the additional value that the perfect monopsonist can extract from each transaction. This enhances our understanding of why have the worldwide countries’ disparate regulatory systems been so unsuccessful in reaching this goal. Market power in product and labor markets is, thus, a matter that requires analysis.

When one single buyer enjoys the availability of multiple suppliers offering the same product, there is a scenario where each seller is pushed to offer his or her products at the minimum sell price that pays for the total cost of production. Each seller is aware of the presence of the remaining sellers and, therefore, they know that they cannot do business unless they ask the unit sell price that pays for total production costs. Suppliers are in a situation close to perfect competition leading to the full employment of resources given the existing technology. Hence, resorting to chart analysis, each seller will ask for a price that is exactly on the supply curve. However, the buyer does not care about anything else but to try to acquire the product or service at the lowest possible price. The buyer finds its limits at the point where the marginal net utility of the input equals its price. Nonetheless, the buyer is always prone to negotiate the best possible buy price that he or she can get. Considering that the buyer will bid an acquisition price lower than the asking price, will the seller make the deal? The question is pertinent because the agreement on a deal price settled below the supply curve implies that the seller bears a loss, a position that cannot be perpetuated over time.

The Value Function provides two important notions that enable us to draw a few hypotheses. First, the relationship between the preference for security and risk aversion is that the first is 2 to 2.5 times more intense than the latter. This means that, in a situation where the seller is facing a one-time decision-making process, he or she prefers to accept a certain small loss to avoid the possibility of a bigger one. Hence, it is likely that the monopsonist entity will be able to acquire the product or service supplied by its network of suppliers at a price below the market equilibrium. Second, it is well known that the value of a good that can be lost or given up is worth more than when it is evaluated as a potential gain. This means that, when the seller is pushed to give away the product at a price considered below its fair value, then the seller is induced to quit the transaction

and, ultimately, the entire production might turn to waste. Consequently, more likely than not, in the long term, both situations will cause a reduction in the number of suppliers available in the market.

Figure 14.



Source: Author's own creation

Figure 14 displays the effect of the development of regular opportunistic behavior in a market where the monopsonist entity exerts its negotiating power. For simplicity, and without loss of generality, it is considered that the monopsonist demand curve (the input's average net productivity) is linear. The pair (Q_{e1}, P_{e1}) represents the equilibrium in a perfectly competitive market, but the monopsonist is bidding P_d instead. Deals occur at price P_d . In this instance, the value captured by the monopsonist equals $Q_{e2}(P_{e2}-P_d)$. Compared with the perfectly competitive situation, the social loss corresponds to the area signaled as "SL" and is borne by the entire society. However, the monopsonist's gain shows how our current regulatory system allows us to concentrate in one single entity the value of a very significant portion of the entire welfare that is produced by society.

Producers, acting in perfect competition, engage in cooperative efforts when they understand the imbalance in negotiating power between them and the sole buyer of the market and quantify the opportunity cost inherent to the situation. For instance, as outlined by Henry Hansmann, in the United States, "cooperatives dominate important industries, such as basic agricultural and supplies, and have a large market share in others, such as wholesaling and production of business supplies and services, electricity generation and distribution, housing, banking, and insurance" while "the overall share of economic activity accounted for by cooperatives is larger in advanced market economies than it is in less-developed economies" (1999, p. 387). The author identifies simple market power imbalances, or market failure situations, as one of the causes that explain cooperative efforts among economic agents. Hence, imbalances in market power are one structural factor explaining some strategic market behavior developed by firms.

The effects of the retaliation of the group of producers toward the monopsonist will be complete if they successfully manage to act in a perfect cartel. In this situation, they can act as a monopolist toward their single customer. In this instance, the cooperative of producers knows that the monopsonist demand corresponds to their product's average net productivity. Therefore, it can make an educated guess of the structure of the monopsonist's demand curve. Afterward, it will fix a sell price such as its marginal cost of production equals the marginal revenue. If the cooperative has a cost structure similar to the one displayed in Figure 13, then they will ask for price P_{e2} while producing only Q_{e2} . The cooperative aims to capture the value $Q_{e2}(P_{e2}-P_d)$, previously in the hands of the monopsonist.

Currently, producers and consumers live in a competitive environment, where each participant understands the gain of one side is the loss of the other. Different strategies are being put into practice to overcome the other party. This analysis materializes the economic game highlighted in Chapter 3 and outstands how the consolidation of competitive attitudes leads to a huge social loss, whose effects are borne by the entire society.

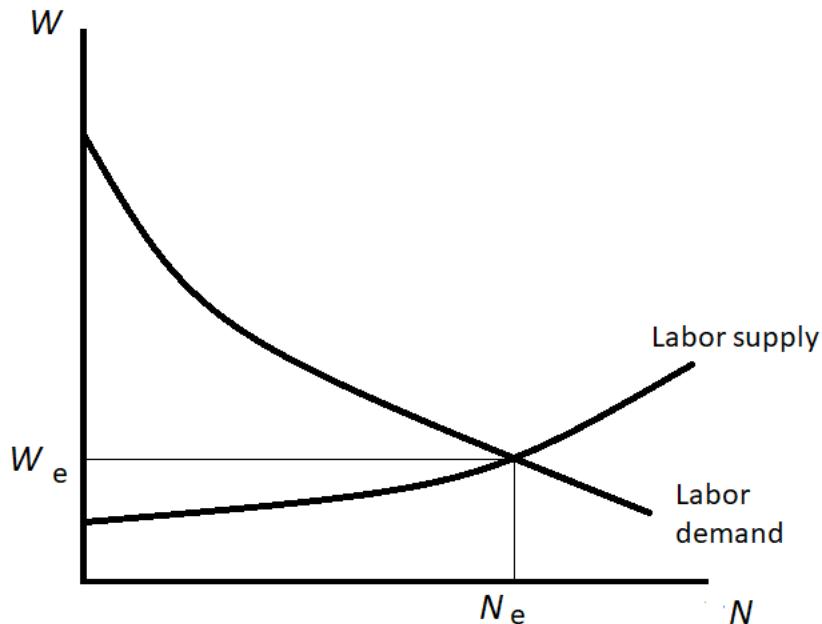
It is interesting to note that, ultimately, in the presence of a perfect monopsony, the monopsonist happens to be the real employer of every available outsourcing supplier. Moreover, the monopsonist entity's cheapest and most consistent use of resources across time is to keep paying P_{e1} for Q_{e1} , which is the same as ensuring the full employment of these suppliers. Hence, beyond the value lost in the economy where imbalanced negotiating power prevails, there is an accrued loss of employment levels, which always carts additional costs to society. The analysis of what happens in the labor market is, therefore, mandatory.

The labor market has heterogeneous individuals whose different skills and capacities foster disparate productive outcomes. Accordingly, the average productivity diminishes as the employer hires one additional labor. The employers may require a more than proportional reduction in the wage paid to hire one more unit of labor, being this effect less pronounced the less heterogeneous the available workforce. By this token, the labor demand is usually assumed to exhibit a steeper downward slope and a curved shape. Conversely, the labor supply curve is assumed to be curved and increasingly upward-sloping because of two main reasons. First, there is a direct trade-off between working hours and leisure time that leads to additional working time being exchanged for proportionally higher wages to offset the dissatisfaction caused by a diminished opportunity for leisure. Second, it is naturally assumed that the higher the wage, the higher the number of persons available to provide work efforts. These are simple, but basic ideas, that must be refuted when these assumptions do not correspond to the circumstances at hand. Nonetheless, since it is generally accepted that both labor demand and labor supply curves exhibit these shapes, the labor market can be depicted as in Figure 15, where W stands for wages (the price of labor efforts) and N stands for labor units (either number of available employees or number of working hours).

The pair (N_e, W_e) is remarkable because it indicates the maximum efficiency of the labor market, where it is impossible to use one additional unit of input at a price that satisfies the two units of control, buyer, and seller. Hence, at this point, society is maximizing the utility that is possible to get from the trade opportunity.

Figure 15.

The regular labor market



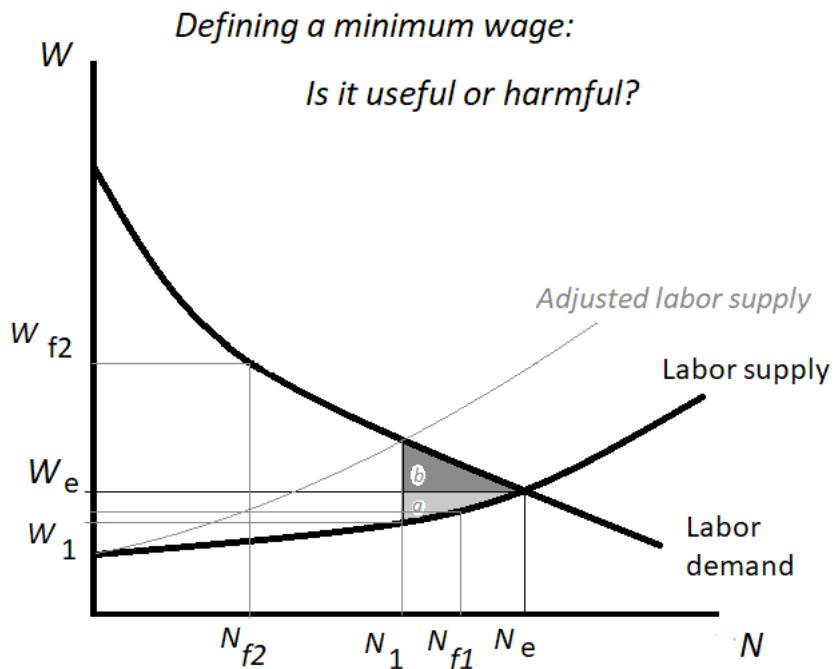
Source: Author's own creation

At the pair (N_e, W_e) , involuntary unemployment is none. Moreover, the value W_e is the maximum wage that employers can bear to hire the quantity of work N_e . If, rather than based on marginal productivity, we draw the labor demand curve within this guideline, then the shapes taken by the labor market supply and demand curves are quite important. First, by defining the set of (N, W) pairs that always correspond to the maximum quantity of work efforts available in the market for any given wage level, the labor supply curve is the indicator of a full employment economy. Second, establishing an analogy between the definition of the demand curve in the market of goods and services and the labor market, we define the set of (N, W) pairs that always correspond to the maximum wage that can be paid to compensate the hired work efforts of their employees, the labor demand curve is the indicator of "zero abnormal-profit." However, over time, the pair (N_e, W_e) has never been reached and involuntary unemployment has been a permanent reality.

Facing scenarios similar to the one just mentioned, the governmental entities try to interfere with the regular market behavior by fixing a minimum wage. Figure 16 illustrates the government's attempt to maintain at controlled levels the society's loss inherent to the existence of unemployment. However, unavoidably, these efforts will always be prone to failure because, by setting up a minimum wage, society's goal is to minimize costs, rather than to maximize overall welfare. As outlined by the value function, we are driving our mindset in the domain of losses while losing the perspective brought by the domain of gains where prosperity can be built.

Once we know that producers' buying decisions are made under the guideline that marginal cost must be equal to or less than marginal utility then, when the economy is imperfectly competitive, the relevant labor supply curve is given by its marginal values. In Figure 15, the curve of marginal values for the labor supply curve is labeled as "adjusted." Governments, pretending they know the shapes and elasticities of the relevant supply and demand curves, often try to interfere with the regular functioning of the economy by defining maximum prices.

Figure 16.



Source: Author's own creation

Following similar reasoning, unions often try to fix minimum wages. If the minimum wage is defined below W_1 , then it is a regulatory effort that does not affect the economy. If the mandatory minimum wage W_{f1} is settled between W_e and W_1 , then the level of employment reached by the economy, N_{f1} , is always below the level of full employment, N_e . Conversely, if the minimum wage W_{f2} is defined at a huge level above W_e (such as $W_{f2}=W_e+Y$, $Y>0$), then society might end up in a final level of employment N_{f2} where $N_{f2}<N_1$, that would be absurd and catastrophic to the regular functioning of the economy.

It is important to realize that these are governmental or union efforts to minimize the loss brought by employers' opportunistic behavior. Hence, any attempt by governmental entities to regulate the functioning of the labor market by imposing minimum wages will always constitute the recognition of the presence of an economic environment (or regulatory system) that is unable to consistently foster positive opportunistic behavior. Society in general, and the governmental entities in particular, are much more concerned with the potential losses raised by human behavior than with securing a consistent productive environment that rewards us all. And, as put in evidence by the Value Function, that is merely who we are. Hence, we must pay closer attention to what we do.

In a society that uses money to facilitate the exchanges of surpluses among its members, purchasing power becomes crucial to define the individual's ability to do something meaningful – like consuming, investing, or saving. Hence, in our case, executive power depends on purchasing power, and, therefore, the ability to take opportunities is conditioned by the way money is distributed across society.

A society uses money because it makes transactions easier, whether they are of an immediate consumption nature, are for investment purposes, or for an intertemporal exchange of consuming moments between economic agents. Consider the tautological relationships given by equation (10),

$M=C+I+S$, and equation (11), $M=P_{ci}(Q_c+Q_i)+P_sQ_s$. The initial amount of money in circulation defines the level of prices in the market for goods and services and the interest rate used in the money market. Because the quantity of goods and services available are used by society members for consumption, investment, and saving, the absolute amount of physical money that is firstly created and distributed across society settles the initial level of prices of the economy. The level of money in the economy, *per se*, does not affect overall welfare whatsoever.

From equation (9), we know that $M=PQ$ is also a tautological relationship. Accordingly, when money is created and distributed across society, its effects will be directed toward an increase in the level of prices only, an increase in the quantity of products available only, or a combination of both. Since $M=PQ$ then, equivalently, so $P=M/Q$ and $Q=M/P$. If we use the symbol Δ to express the discrete positive variation of each variable, then $\Delta M=\Delta P\Delta Q$. Hence, $\Delta P=\Delta M/\Delta Q$ and $\Delta Q=\Delta M/\Delta P$. Therefore, the creation and distribution of new money cannot be good for any society unless it enables that $\Delta Q>\Delta M$. Only then, society will enjoy a higher number of available products at lower prices. This notion consolidates the economist's understanding of how human opportunism can be driven through the sheer manipulation of the physical money supply and, therefore, is paramount when setting up a regulatory system that aims at securing overall welfare.

The way opportunistic behavior evolves in the money market for the economic agent to capture value is usually not well understood. The participants in the money market are banks, consumers, firms, and governmental entities. These economic agents might participate in the money market as suppliers or seekers of purchasing power. Either way, they all act to improve their well-being. The representation of the money market's supply and demand curves depends on how their mutual participation occurs. The effects of their opportunistic behavior on overall welfare are, thus, requiring inquiry.

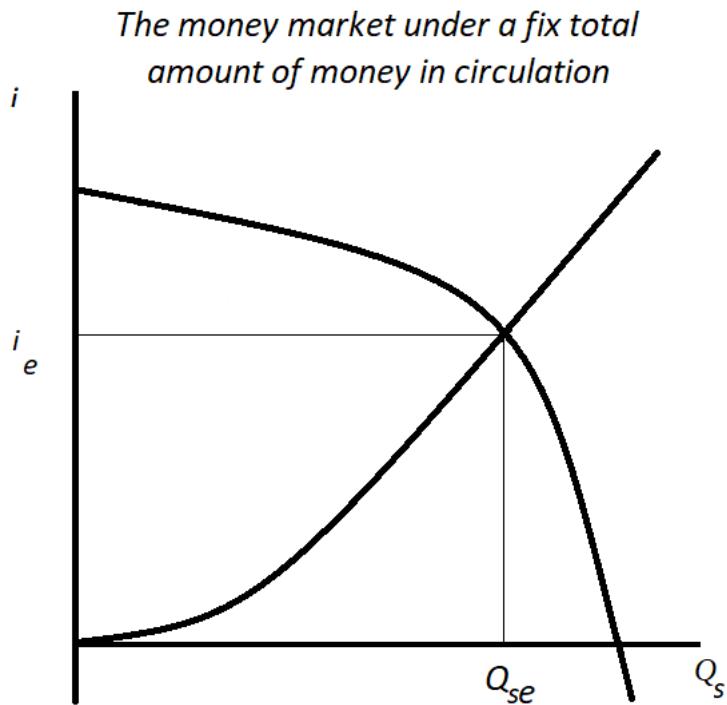
When the consumer asks for a money credit, he or she seeks to grab the opportunity of immediately consuming a good or service while exchanging it later on, in the future, for a reduced purchasing power when the amount of money first received is returned to the lender afterward. Following this line of reasoning it is easily understood that, in the space (Q_s, i) , where Q_s stands for the quantity of money supplied, and i represents the price of immediate purchasing power, the demand curve is downward sloping. Since the accrued purchasing power is aimed at fulfilling consumer needs, then it is likely that it requires a more than proportional decrease in the interest rate for the money seeker to be willing an additional unit of purchasing power. Furthermore, the demand for purchasing power for negative values of the interest rate makes sense, for it means that it is possible to exchange the possibility of acquiring a good in the present for one currency unit while having to return a little less than one currency unit in the future.

However, the supply of purchasing power can have two different sources. First, this augmented purchasing power might come from the savings of another economic agent. Second, consumer credit can be granted by the bank by creating new money. While this difference has been acknowledged by economic research over time, they present two completely different sources of supplying purchasing power and require a separate analysis because of the disparate opportunistic behavior that stems from them.

We begin with the first case, where the source of purchasing power supply comes from the regular savings of other economic agents. In this instance, the higher the interest rate that the intertemporal change of purchasing power can provide to the lender, the higher the quantity of purchasing power he or she is willing to give away. Hence, the supply curve of this money market has a positive slope. Due to the documented human preference for consuming in the present, highly reported in the

works of Christopher D. Carroll and Daniel Kahneman, we know that it is likely to require a more than proportional increase in interest rate to induce economic agents to supply an additional unit of purchasing power. In this instance, the total quantity of money in circulation in the economy does not ever change. The graphical representation of the money market is illustrated in Figure 17.

Figure 17.



Source: Author's own creation

Analyzing the nature of opportunistic behavior in a society that does not create new money is relevant to compare this possibility with a reality where new money can be consistently created.

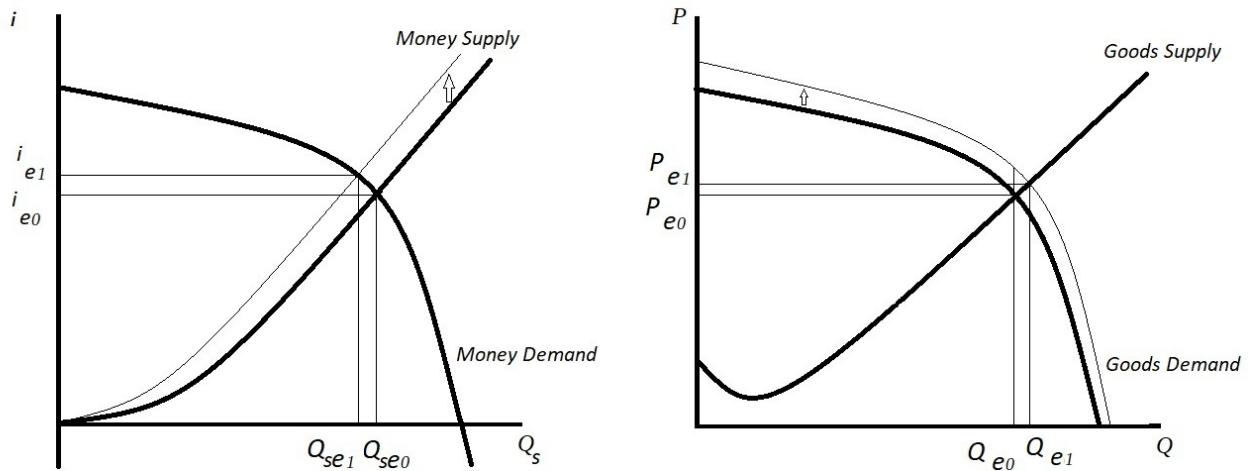
In this particular case, where no new money is created to grant credit operations, the present savings of some economic agents enable the present expense of other economic agents. The consumer, the firm, or the government enjoy an intertemporal transaction of purchasing power. At the same time, the parties agree on an interest rate that can be zero. Still, it cannot be negative unless the economic agents expect a consistent decrease in the prices of goods and services. Moreover, as highlighted by equation (11), the interest rate that results from the encounter between supply and demand is adequate to the overall economic needs and is not manipulated by any entity whatsoever. Individual decisions give rise to the expeditious grabbing of opportunities just as long as economic agents are free to act. This is a situation where banks often offer an intermediation service for which they collect a fee. Furthermore, this is a situation that prevents some of the present savings from becoming future waste because each transaction enables the immediate consumption of what has just been produced. The functioning of this market induces everyone's positive opportunistic behavior by enabling economic agents to take opportunities at the time they are perceived. Hence, through this money market situation, society increases overall welfare.

However, the regular functioning of the money market requires that the borrower reimburse the lender in the future. Under a regulatory framework where society defines a fixed amount of money

in circulation, the adjustments in the money market and the market for goods and services are dependent on the output that society can produce. From moment 0 to moment 1 (from present to future), when the borrower cannot comply with the reimbursement, that means that the level of society's expense has increased and the proportion of savings available to be supplied in the money market has decreased. In the market for goods and services that means an increase in the quantity demanded for the same level of prices. In this instance, contractual breaches lead to a general price increase in the economy that spreads between the market for goods and services and the money market. Figure 18 extols the effects in the economy of contractual breaches perpetrated by the borrowers of purchasing power. When the borrower does not comply with the inherent liabilities, the entire overall welfare is compromised. And society will live worse the higher the number of members engaging in this behavior. Hence, the borrower's failure acquires a negative nature regarding the analysis of opportunistic behavior.

Figure 18.

The effects of borrowers' failure under a fix amount of money in circulation



Source: Author's own creation

As illustrated in Figure 18, in moment 1, in the money market, this effect leads the money supply curve to shift upward because, for the same level of interest rate, there is a smaller quantity of money available to be lent and the lenders will be asking for a higher interest rate due to the borrowers increased perception regarding the risk of failure. Also in moment 1, in the market for goods and services that corresponds to a shift upward of the aggregate demand curve, for the same level of prices, the quantity that is demanded is now higher. From equation (10), we know that $M=C+I+S$ at all times which, under the notation used in Figure 18, is the same as $M=P_e Q_e + i_e Q_{se}$. Markets will promptly find equilibrium through the market price mechanism if they are free from artificial interference.

In this instance, it is interesting to note that, in moment 1, society is living worse because the price level has increased in both, the market for goods and services and the money market. Since $M=PQ$ and M is kept steady, that means that the overall output of the economy decreases from moment 0 to moment 1. When the quantity of money in circulation is fixed, the markets are efficiently adjusting through the price mechanism, and the graphical representation of Q_e and Q_{se} evidence the weight of the output in each market. Therefore, only the quality of the labor and the society's capacity to increase the quantity of goods available will lead to improvements in overall welfare. Furthermore,

it remains clear that the overall welfare level is defined by the level of prices concerning the available output and not by measures based on PQ, which is the same as trying to perceive the overall welfare level based on the total amount of money in circulation.

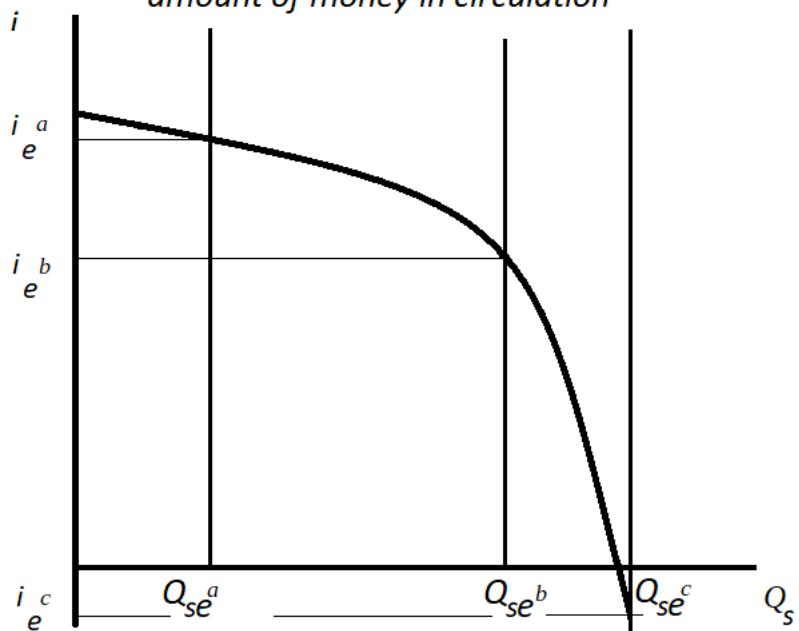
Notice that, given the steady quantity of money in circulation and after moment 1's borrower's failure is confirmed, the economy will return to its normal levels that existed before this event happened, unless the expectations regarding future borrowers' failures set in and the structure of aggregate supply and demand curves changes in both the money market and in the market for goods and services.

It is thus crucial to compare this scenario with a reality where new money can be consistently created.

In a situation where money can be created by banks at will, society is facing a scenario where the money supply is perfectly inelastic. Since the money supply is fully controlled by the financial authorities, society is facing a circumstance where the total quantity of money supplied is arbitrarily decided by human interference. Hence, the money market's equilibrium acquires an unstable nature as illustrated in Figure 19.

Figure 19.

The money market under a manually controlled amount of money in circulation



Source: Author's own creation

In this situation, the quantity of money supplied is decided at the discretion of the monetary authorities and market equilibrium can be randomly found at multiple locations such as "a", "b" or "c" in Figure 19, according to the decision of the monetary authorities. It is interesting to note that, in this instance, the interest rate can easily be negative for it costs nothing at all for the monetary authorities to create new money while the individuals composing the demand for money will gladly accept the possibility of enjoying, in the present, an increased purchasing power without having to proceed to its full return in the future.

It is well recognized by the literature that producers are induced by an increased demand. For instance, Enrique Palazuelos and Rafael Fernández, addressing the slowdown in growth in labor productivity in European economies, pose that “*aggregate demand determines effective production and structurally conditions the performance of productivity through three channels or effects: scaling, capitalization, and modernization*” (2008, p.13). Hence, understanding the effect on the overall welfare of the discretionary decision of the monetary authorities becomes a crucial matter for Normative Economics.

Assume that the economy starts from a money equilibrium as the one depicted in Figure 17, i.e., under an initial market equilibrium reached for a given total amount of money in circulation (which is similar to equilibrium “b” in Figure 19). Afterward, consider that the monetary authorities decide to decrease the total money supplied to level Q_s^a . This decision is simply perpetrated by arbitrarily deciding to increase the interest rate to i_e^a . The existent financial contracts will have to reimburse the financial system with higher installments and the total amount of money in circulation decreases until it reaches Q_s^a . It is, therefore, mandatory to analyze the effect of this discretionary measure on overall welfare.

Currently, the regular functioning of the money market requires that the monetary authorities safeguard the credibility of the financial markets at all times. Hence, a measure of reducing the total amount of money in circulation might be fostered by a fan of reasons such as a reaction based on fears of future borrowers’ failure (i.e, a perception of increased risk on financial operations), as a reaction against a decrease on the overall productivity, or as a result of regular market competition among banks. Since $M=PQ$ always holds, a decrease in overall productivity causes an increase in prices which, in turn, will decrease the purchasing power of the financial system unless it can increase its revenues. The effects on the economy of the financial system’s regular behavior are well known by research, through works such as those of Gary Gorton and Ping He (2005), Martin Ruckes (2004), Patrick K. Asea and Brock Blomberg (1998), William Lang and Leonard Nakamura (1995), Mark Gertler and Simon Gilchrist (1994), and many others.

When one analyzes the regular functioning of the money markets, there is one type of purchaser power seeker taking a differentiated role in what concerns both its mindset and contribution to overall welfare: The government. It is very important to underline the difference between the government’s money demand from the other economic agents for several reasons. First, the government is not a profit maximizer entity whose purchasing power is usually used to raise new productive units aimed at immediately delivering to society more products at lower prices. Second, apart from resorting to the financial market, the government’s remaining source of purchasing power comes from raising taxes on society. This source of purchasing power causes a reduction of the aggregate demand directed to the market of goods and services unless it is immediately used in the acquisition of goods and services already produced. Third, either by raising taxes to refund the financial system with public debt installments or by asking for the creation of new money to be granted with additional public debt, both situations cause unavoidable imbalances in the three relevant economic markets.

In the realm of the regular functioning of our current global financial system, it is of notorious importance the weight of the countries’ public debt, because the debt that is raised by a governmental entity does not follow the same goal of profit maximization as it happens in the domain of private corporations. The national debt of Japan, as of March 2023, was 263% of the country’s Gross Domestic Product (GDP); the national debt of the United States of America, as of September 2023, was 122.9% of the country’s GDP; and the national debt of Portugal, as of

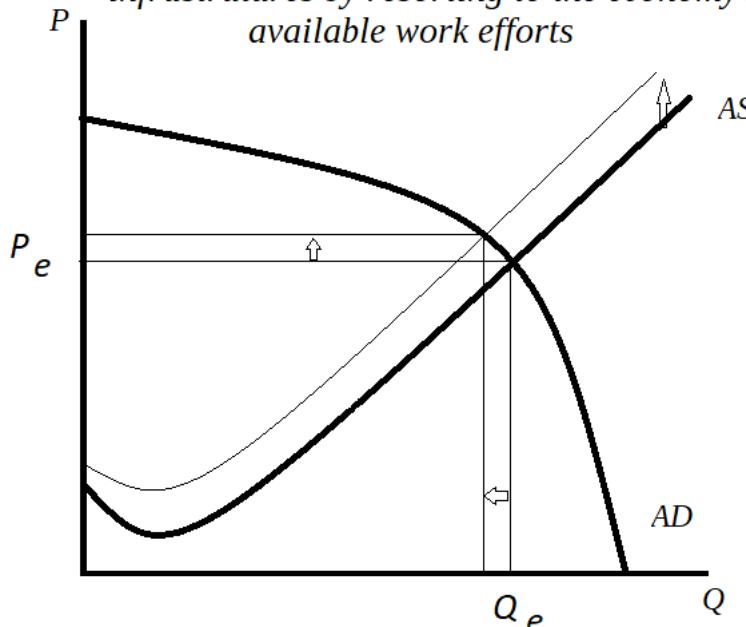
September 2023, was 107.5% of the country's GDP. These disparate values of the public debt of several countries demand inquiry to conclude on the nature of opportunistic behavior that it fosters.

As a matter of detailed example, but without losing any generalization ability, let us consider that a given government decides to build a bridge that hugely facilitates the transactions between two cities in the country. The government intends to raise an infrastructure that will enable its country's welfare to thrive by increasing trade conditions between two different locations or groups of producers. This governmental endeavor can go ahead through three different types of financing: 1) by using the available labor and material resources; 2) by resorting to a tax increase across the entire population; and 3) by increasing public debt. After building the bridge, the government will have to safeguard its maintenance activities over time, which adds a financial issue.

Beginning with the government's possibility of using labor efforts and material resources withdrawn from the economy's regular production to build the bridge, two immediate effects occur in the short run. First, during the time the infrastructure is being built, an amount of work effort is diverted from the regular production of the economy. This leads to a decrease in the total amount of regular goods available to consume. Since $M=PQ$ and the total amount of money in circulation did not change, then the decrease in the produced quantities directed toward consumption and investment activities leads to an increase in the average weighted prices of the country's market of goods and services. Figure 20 illustrates this short-term effect.

Figure 20.

The short-term effect of building public infrastructures by resorting to the economy's available work efforts



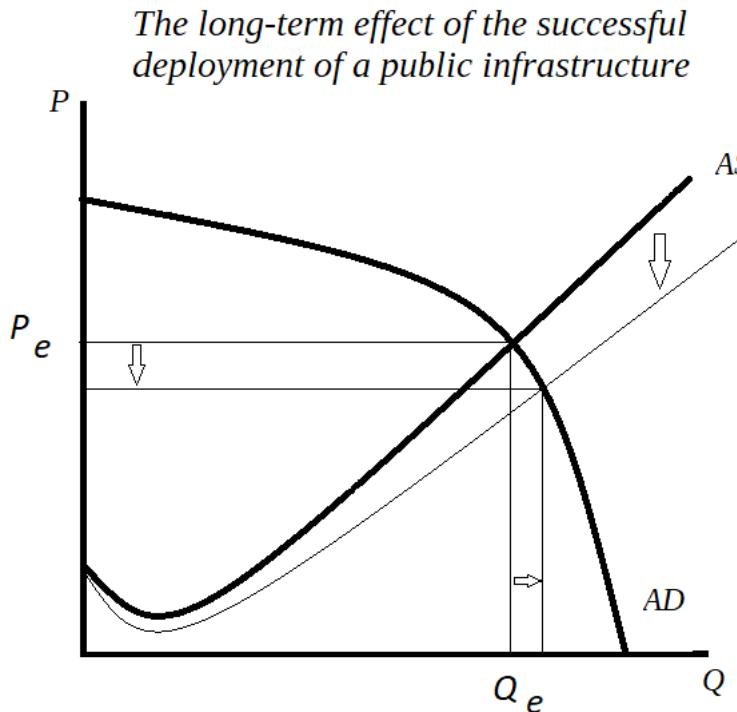
Source:

Author's own creation

We know that the price increase that will be felt in the economy depends on the shape of the curves of aggregate demand (AD) and aggregate supply (AS). However, regardless of its magnitude, it is certain that prices will climb in the market for goods and services when the bridge is being built by resorting to the country's resources. Hence, the entire society will be contributing to the endeavor.

The type of opportunistic behavior that follows this governmental measure is of the utmost relevance to the country's overall welfare. If the investment is successful, then the bridge will enable the exchange of goods, services, and knowledge between the two cities. Likely, this creates the possibility of producing higher quantities of goods and services at lower production costs. Since the money in circulation in the economy does not change, the demand side of the economy takes over its initial shape. Once the construction of the bridge returns its positive effects on the economy, the aggregate supply side of the economy shifts downward because, for the same level of minimum sell price, producers can deliver higher quantities of goods and services to the entire population. Figure 21 depicts the long-term effect on the economy of a successful deployment of a public infrastructure.

Figure 21.



Source: Author's own creation

It is worth noting that, when the governmental measure is adequate to the economy's needs, the entire population bears the short-term effort through a period of price increases and available lower quantities of regular goods and services. Conversely, in the long run, the entire population benefits from the measure. In this instance, the entire population is cooperating to reach an overall welfare improvement.

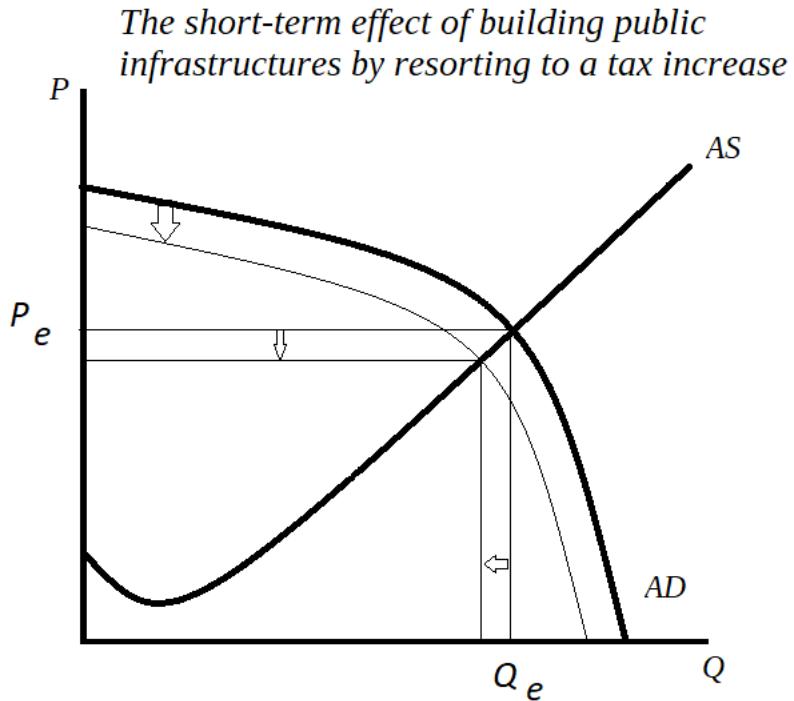
However, rarely, a government can easily resort to the voluntary contribution of the country's citizens' work efforts and resources to deploy a public infrastructure. Accordingly, these endeavors are usually financed by a tax increase or public debt creation.

When the government raises a tax on the entire population to finance the building of the bridge of our example, it produces one major consequence in the economy: the quantities demanded in the regular market for goods and services decrease for the same price level because the consumers' available budget diminishes. The aggregate demand curve of the economy shifts downward. Hence,

regardless of how fast are producers adjusting their selling prices and offered quantities, the entire country will suffer a reduction in the available quantities. Once again, in the short term, the entire economy is bearing the construction of the public infrastructure. Figure 22 illustrates this effect.

Afterward, in the long-run, if the investment is successful the population will benefit from the endeavor as depicted in Figure 21.

Figure 22.



Source: Author's own creation

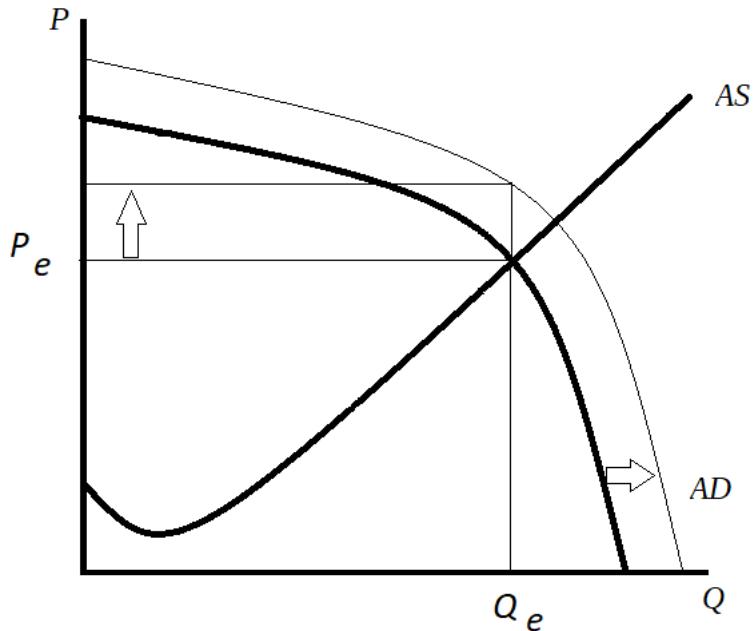
In these two first possibilities, the government is aiming at overall welfare improvement without resorting to the money market. However, if the government resorts to the money market there are two disparate financial possibilities: 1) it resorts to the available savings of the general public; or 2) it resorts to the creation of new money. Each has very different effects on the economy.

When the government resorts to the general public savings to finance the building of the bridge, it assumes the responsibility of returning to the lenders the amount of their savings. Therefore, in this instance, there is an intertemporal change between economic agents which is the same as if the regular money market evolves under a steady total amount of money in circulation. In this case, to be able to return in the future the value that was borrowed in the first place, the government will have to collect payment for the services it provides to society, just like any private entity does. Hence, if the government finances its public expenditures by resorting to the regular functioning of the money market and acts consistently as a provider of goods and services, then the tautological equality of $M=C+I+S$ remains steady, and no immediate and significant effect occurs in the economy in the short-term. Conversely, in the long run, if the public investment succeeds, then the country will enjoy the effects depicted in Figure 21.

Finally, when the government resorts to the creation of new money, the total amount of money in circulation increases. Since $M=PQ$ and the total amount of goods and services available are the same, then it leads to an increase in prices. Hence, once the new money enters the economy, the aggregate demand curve shifts upward. Figure 23 illustrates this short-term effect.

Figure 23.

The short-term effect of building a public infrastructure by resorting to the creation of new money



Source: Author's own creation

In the short run, the overall price increase leads the population to suffer the effect of building the infrastructure by buying a reduced quantity of goods and services, exactly as it happens under the effect of a tax increase. However, in the long term, if the investment fails, the population returns to the pair (Q_e, P_e) enjoyed before the public endeavor. Conversely, if the investment is successful, the population will enjoy more products at lower prices, as illustrated in Figure 21.

Nonetheless, the positive effect can only be effective if the government does not have to refund the monetary system for the new money just created. In this case, even if the investment succeeds, and at the moment after the short-term, the government will have to resort to a tax raise to refund the entity that has created the new money that funded the public infrastructure. The overall population can only end up better if the amount of tax that is going to be asked to bear is proportionally smaller than the proportional increase in goods and services that will be able to enjoy. And this is often in doubt.

There are several important considerations to look at regarding the existence of public debt.

First, regardless of whether the expense where the money was used refers to a successful investment or not, there is nothing to worry about if the government can produce its own new money that does not have to be refunded by the population. In this case, accounting procedures should apply to

remove the idea that there exists a debt that the population must answer for. However, often, this is not the case.

Second, if the public debt comes from the regular citizens' savings, then it is part of the regular functioning of the money market. In this instance, the government will be contributing to raising the interest rate of the common citizen's savings. If the investment succeeds, then the government will be acting as a regular unit of control and the creation of this debt is virtuous in the sense that allows to take advantage of a detected opportunity. Moreover, everybody will be living better the more this behavior is replicated. Conversely, if the investment fails, the government will have to opt between two options, either not refund the regular citizens' savings or resort to a tax raise to face the liability. Either way, there is no withdrawal of money from the economy, but both regard negative opportunistic behavior. In the first case, the government will foster a decrease in confidence in the financial system, and people will stop leaving their savings in the banks. In the second situation, the practice is that the entire population will have to refund the lenders of the savings. Again, the more the situation occurs the less people will be prone to lend money to the government. Hence, in both cases, the entire economy will be worse off the higher this behavior is replicated in society.

Third, if the public debt comes from money just created by the financial system, then the savings of the general public are being devalued. However, considering the possibility that the general public savings were not enough and that the investment succeeds, everybody will likely be living better after.

And fourth, if the public debt comes from money just created by the financial system and the investment fails, besides being the same as ignoring the existence of a money market, it is simply a shame when the regulatory environment enables the lender of this money to force an entire population to live worse until it refunds somethings that has cost absolutely nothing to produce. Once again, regardless of moral considerations, this is negative opportunistic behavior for everybody will be living worse the more this behavior is replicated in society.

It is, therefore, important to realize that the amount of public debt that each country exhibits as a GDP percentage does not mean much unless it is possible to identify in detail all its sources. The funding source of public debt is another building block of Normative Economics because it is impossible to set up a thriving private sector in the economy when governmental decisions foster negative opportunistic behavior.

Identifying negative opportunistic behavior does not constitute per se a threat to overall welfare. Only its persistence does. Society's well-being is severely compromised when negative opportunistic behavior has room to spark additional negative opportunistic behavior as a reaction to the first action.

The simplest example concerning the resorting to negative opportunistic behavior by the economic agents regards the efforts developed to act in secrecy, i.e., actions to deceive the other party while trying to hide from the remaining society the true circumstances. Examples are countless: governments that do not explain how their public debt is funded; banks that create money for consumer purposes only; firms that engage in misleading advertising campaigns and/or subtle product downgrades that are deliberately kept hidden from the customer's awareness; and buyers that try to acquire as much as possible of a given good to enjoy a monopolist position in a near future.

As shown in Chapter 4, acting competitively is a very emotional human reaction that finds its persistence due to our bounded rationality. It is easily proven that cooperation takes us far further than competition. It becomes always unanimous that a win-win relationship is preferable to a win-lose relationship, but we, stubbornly, keep competing... And this animal propensity of ours leads us to unbalance economic activity.

From equation (10), we know that $M=C+I+S$ at all times. This tautological relationship can be rewritten as in equation (11) where $M=P_{ci}(Q_c+Q_i)+P_sQ_s$. From the understanding of the “Business Zone”, we know that, when the markets are not balanced, the price levels are higher than it is possible to reach given the existing technology while the quantities produced fall short of what can be done. This sort of situation is quite well illustrated by Figures 10 and 14. The former shows that the monopsonist defines a buy price well below what he was willing to pay while the latter evidences the reaction of the producers to join in cartel and evolve to completely turn the situation into the opposite side where they are to take the full gain inherent to the trade. Buyer and seller compete for the immediate gain they are perceiving to be at stake while completely disregarding that there are resources left unused.

The most prominent characteristic of markets' imbalances is the worldwide proliferation of unused resources.

Available resources always mean available opportunities. When a monopsonist takes to himself the entire gain inherent to the trade, its stream of suppliers understands that it pays well to join efforts and act together against the monopsonist. Following the monopsonist's behavior, the cartel replies with another form of negative opportunistic behavior. It is mandatory to outline that this type of reaction if successfully done, leads to an outcome where the parties change positions, and the win-lose situation is perpetuated. This ironic scenario is fully outlined by the fact that no party makes sense without the other. And the only way to take full advantage of the available opportunities is by building a perfectly competitive environment and engaging in full cooperative mode, without leaving nobody behind.

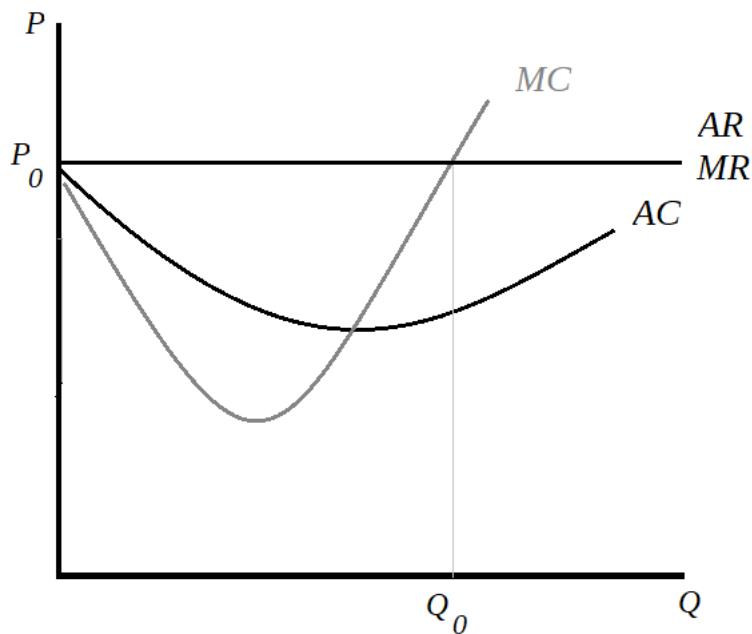
It is possible to identify the actions that society members perpetrate that consistently lead to a general overall welfare diminution. First, research has shown that corporations aim at maximizing profits and either compete for market share or collude to act in a cartel. Either way, the economic agents seek market power and use it to extract immediate value from the available market. This mindset leads the producers to seek monopolistic competition and monopsonist power, which always means the perpetuation of imbalances in the market for goods and services and the labor market.

Uneven market power carts a range of consequences to overall welfare that are not intuitive. First, uneven market power conditions the society's basket of products available and/or diminishes society's capacity to enjoy a higher diversity of products. Second, it further stimulates competition among rival groups. And third, it reinforces itself through the regular opportunistic behavior of the financial market. Each demands further inquiry.

The awareness that uneven market power conditions the basket of products available is not intuitive. Consider a situation where, by governmental decision, the maximum sell-price of a given product is fixed and the producers are enjoying a market power situation such as no firm can enter the market and pushing the remaining to lower their sell-prices. Figure 24 illustrates this circumstance.

Figure 24.

Firm's output when enjoying abnormal profits



Source: Based on Robinson, J. (1933) "The economics of imperfect competition"

In Figure 24, the level P_0 indicates the value of both average revenue (AR) and marginal revenue (MR). The curve AC stands for the average cost curve while the curve MC stands for the marginal cost curve. In this instance, the firm is going to produce the quantity Q_0 , maximizing its profit where the marginal costs equal the marginal revenue. However, the firm is not producing at the minimum of its average costs. In this situation, the dimension of the firm is bigger than what is optimal from what concerns the use of the available resources for it is possible to lower the average cost of production with the available technology. Therefore, the firm is using higher quantities of the productive factors than it optimally should if society were to maximize overall welfare. The higher the number of firms enjoying this market power, the lower the number of products available, for a fraction of the productive factors are mismanaged into the too-big corporations' inefficiently produced output.

This imbalance is further extended into the market of the productive factors. As we have seen above, the existence of monopsony power leads producers to leave unused a portion of the available resources. Regardless of the inherent inefficiency that comes out from the situation, it causes further worry the fact that each firm enjoying monopsonistic-ability perceives it as a crucial success factor for its business. If a firm can acquire a cheaper productive factor will be able to protect itself against an eventually low-pricing campaign that might be launched by a competitor. Accordingly, rather than seeking to eradicate uneven market power, firms seek to hold as much as possible of it and end up in open rivalry. Hence, under our current regulatory system, competition escapes the scope of the tug-of-war between buyer and seller to encompass a struggle for the highest possible market power among producers.

Firms' market power receives a very strong push from the financial market under a process that is not well understood by the general public. When banks create new money to grant consumer credit, and since $M=PQ$ is a tautological identity, they are simply inducing an increase in the prices of the

available products and services. At moment 0, when the credit is granted, M is increased by the financial system inducing an increase in prices. The higher sell-price is immediately resting in the producer's pockets and firms can score an even higher profit from their businesses. Conversely, in moment 1, when consumers must refund the banks with the value of the money created before by the financial system to grant credit, money will be withdrawn from the regular functioning of the economy and consumers can no longer buy the same quantities of the available goods and services that are now at higher prices. Again, since $M=PQ$ but M is being reduced in moment 1, some firms will be unable to sell the entire production and some will go bankrupt. The result of this process is that the big firms get bigger and the small firms will be continuously living on the edge. Economic inequality is nurtured through this process.

However, this is not the only way the financial system acts as a source of disturbance in the economy.

Another subtle derangement perpetrated by the financial system in the regular functioning of the free markets comes from the use of collateral to perform credit operations. When a credit is granted, two things can happen: 1) either it is successful, or 2) the customer is unable to refund the bank under the plan agreed. When credit is successful, resorting to the use of real guarantees has harmful effects on society. In this case, and ultimately, the use of a real guarantee proved to be perfectly unnecessary since the customer, based on the normal development of his economic activity, complied with what was contracted in the credit operation. But, in the first instance, the banks conditioned the attribution of credit only to customers who possess goods to protect credit operations. Hence, only those who possess assets to use as collateral will be enjoying credit. This results in an important social inequality that prevents people, who are not previously owners of any relevant material asset, from being able to benefit from the support of the financial system, even if they are competent in what they do or have good business ideas. Society loses because many companies are precluded from increasing the quantity of goods and services available to everyone at lower prices. On the other hand, when credit is unsuccessful, resorting to normal legal mechanisms should be sufficient for the bank to be compensated for its loss. When there is an effective judicial system there is no need to resort to the use of real guarantees in the first instance. The use of real guarantees for granting credit inhibits society from being more productive and constitutes another spark of economic inequality.

However, there is another loss to society. The use of collateral in the granting of credit also induces banks not to facilitate the eventual renegotiation of loans in progress, even if the firms' businesses are still viable. In these cases, banks often foreclose on collateral instead of keeping firms in business. This is a situation of negative opportunistic behavior since the bank itself will be living worse off the greater the number of other banks acting this way.

Ultimately, the financial system, just like any other economic agent, simply acts opportunistically in its efforts to capture value. Sometimes, it fosters positive opportunistic behavior. Sometimes it does not. But it acts according to the regulatory system that society is currently abiding by.

The existence of competitive behaviors is due to our immensely creative human nature combined with our bounded rationality. The former enables us to continuously seek value and improve our living conditions. The latter does not allow us to accurately foresee the full range of consequences of a given regulatory system. Accordingly, deluded by immediate gains, human society cannot easily understand the opportunity cost at stake.

It is plain that the persistence of competitive behaviors in society leads us to lose a significant amount of welfare. This loss touches the richest person on Earth, just as the richest king of the 18th century lived with much less comfort and enjoyable experiences than what happens now with many employees. However, just like the monopsonist can only look at the gain that is available in every single trade, under a very short-limited sight, its suppliers are unable to extend their vision to what can be accomplished in the long run if they choose to join efforts, but encompassing the monopsonist as well as someone important in the process. Figure 13, illustrates that the highest levels of average utility are reached when society reaches a perfectly competitive environment. And the utility that is felt by society extends far beyond the monetary value given by the product QP , when the pair (Q, P) is located at the exact point where the aggregate demand curve (or marginal utility curve) cuts the aggregate supply curve (or zero abnormal-profit indicator). Welfare is a concept that goes beyond the material dimension.

The level of abstraction we have been tracking might lure us into that profit is a wrong thing. However, profit is a monetary measure of the benefit the entrepreneur can get by engaging in economic activity. The amount of profit available in a trade cannot be dissociated from the potential marginal utility held by the consumer, nor from the cost that the producer is bearing. Hence, the contribution of the concept of profit to economic development extends its effects to our human simultaneous focus on other persons' needs and our production costs. Profit is a concept that embraces the entire society without leaving anyone behind. Profit, rather than being eradicated, must be embraced for it is of the utmost importance for society to detect the opportunities to improve overall welfare.

Taking advantage of available opportunities is a societal challenge for humanity is composed of heterogeneous individuals who often cannot detect a given opportunity at once. The detection of the opportunities is even meager when some members of the society endeavor to hide information from the remaining, aiming to reserve them the ability to capture gains. In this instance, negative opportunistic behavior is looming out. It is, therefore, plain that the ready and wide disclosure of profit levels is necessary to foster economic development.

Profit is a measure of society's inefficiency and, as such, it is crucial to accurately know its extension. Since profit is the outcome of total revenue less total cost, it can be translated into average values by dividing the total values by the total output. Embracing average values, and simplifying by assuming that the seller is only present in one market, the producer's settled sell price must be as close as possible to the curve of marginal utility provided by the good or service to the consumer. This way, the selling price expresses the utility of the good to society. If producers can identify the highest possible price at which the aggregate demand buys a given quantity of output then producers will be capturing the highest profit from the economic activity. Accordingly, abnormal profits will signal society's need for further firms to enter that market. And that is the most outstanding contribution of profit to overall welfare.

Every firm's profit is the outcome of total sales less the total cost of production. Nowadays, almost every firm worldwide buys productive factors from many different sources and locations, produces in several countries, and develops their sell-efforts in physical marketplaces and online. Hence, whether in what refers to production costs or revenue sources and locations, producers, and consumers are deeply intertwined in a worldwide web that confers to profit a global nature.

Figure 9 illustrates the firm's behavior when it can discriminate prices among two different markets. It con-substantiates that it is illogical to think that what happens in one single location does not affect the welfare of the citizens that live in another place. The relevant society for an economy is

composed of every place where there is freedom to take advantage of the available opportunities. Today, human society communicates at a global scale, trades at a global scale, and seeks value at a global scale. The subtle spotlight of Figure 9 is that there is no such thing as an open economy. On our planet, we are all living in a closed economy.

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8- The mathematical expression of the connectivity between freedom, purchasing power, and opportunistic behavior (the equations of “how it must be”)

The mathematical expression of the bond between individual freedom, purchasing power, and opportunistic behavior enables us to deeply understand what a proper regulatory system, that is unanimously accepted across society, looks like.

In light of the above exposition, it is plain that the economic control units (buyer and seller) interact according to the scope provided by the regulatory system, which sustains the government and the financial system as sources of either disturbance or reinforcement of positive opportunistic behavior. This strong bind between the rules that society demands their members to abide by and how the individual decision-making process happens, unavoidably, leads to a stream of effects on how opportunities to use the available resources are taken. Hence, the beginning of the entire economic process starts with the institutional environment’s shape, even before we can consider resource capabilities. Deducing the equations that show us the adequate legal framework is, therefore, fundamental.

We begin with the Timothy Besley and Maitreesh Ghatak (2010) framework. We consider a single producer in the economy, in which there is no form of exchange. The authors mention that we may consider the example of a “*farmer who is endowed with a quantity of land*” (Besley & Ghatak, 2010, p. 4529). The authors use this model to analyze the role of property rights in limiting expropriation. I will extend the analysis to verify the employer’s role taking a parcel of the total output generated by the employee’s work effort. The procedure makes sense because the economy’s outcome depends on the performance of both employers and employees.

The authors use the variable e to express effort (or human work efforts). In what follows, this notation was kept to respect the authors’ original notation. Therefore, in the following equations, the notation e must not be confused with the number of Nepper (or Euler’s number).

Consider a very simple model where the farmer commits effort (time), where effort $e \in [0, 1]$, of which the farmer has an endowment of total possible working time of \bar{e} , where $\bar{e} \leq 1$, and yielding an output A . The resulting output A has a probability of occurrence of $e^{1/2}$ and may be zero with a probability of $1 - e^{1/2}$. Therefore, under this simple model, the expected output is:

$$Q_e = Ae^{1/2} \quad (12)$$

The production function assumes that there is an effect of exhaustion along with the increase in work efforts – i.e. decreasing returns to scale as illustrated in Figure 25.

In this framework, the farmer’s expected consumption is given by Q_e , and his or her leisure time is given by $\bar{e} - e$.

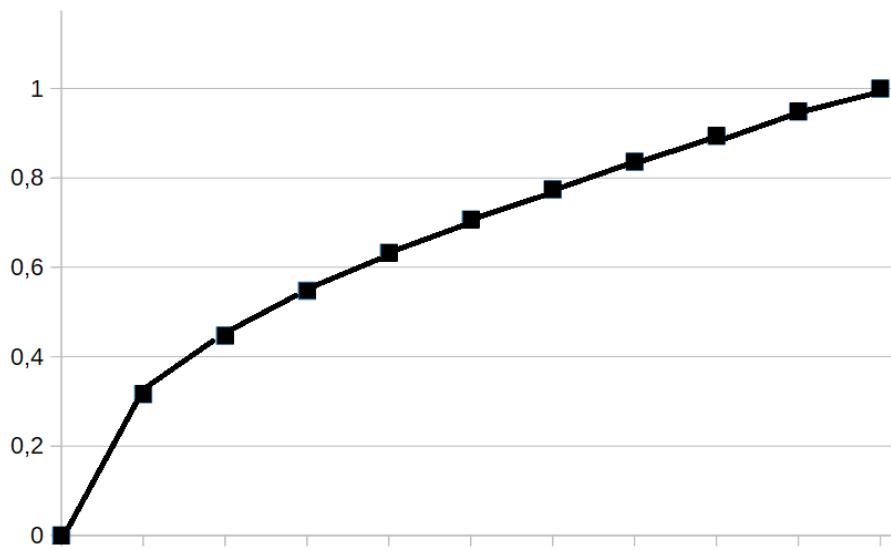
The economic agent is assumed to be maximizing his utility function, U , which is linear in consumption, c , and leisure, l . Thus, we assume the farmer is subject to the condition $e \leq \bar{e}$ and wants to maximize his or her utility by setting work efforts e .

Therefore, the entrepreneur’s problem is as follows:

$$\begin{aligned} \max U(c, l) &= c + l = Ae^{1/2} + \bar{e} - e \\ \text{subject to } &(\bar{e} - e) \geq 0 \end{aligned} \quad (13)$$

Figure 25.

Work efforts decreasing returns to scale,
 $f(x) = x^{1/2}, x \in [0,1]$



Source: Author own's creation

Moreover, to simplify the analysis, without loss of generality, it is assumed that there are neither income effects nor risk aversion considerations.

Timothy J. Besley and Maitreesh Ghatak (2010) consider a given probability of expropriation τ which always represents a failure of the farmer to fully enjoy the fruits of his or her work efforts. Thus, in this instance, τ represents insecure property rights which may take the form of a tax or stealing, but always means the loss of a portion of the entrepreneur's production. Under given expected taxation (or expropriation) in the economy, represented by τ , since part of the producer's output is not going to be available for his or her consumption, the entrepreneur's problem is now presented as follows:

$$\begin{aligned} \max U(c, l) &= c + l = (1 - \tau) Ae^{1/2} + \bar{e} - e \\ \text{subject to } &(\bar{e} - e) \geq 0 \end{aligned} \quad (14)$$

Solving the maximization problem while considering the constraint $e \leq \bar{e}$, we obtain the optimal choice of the entrepreneur's work efforts, e^* :

$$\begin{aligned} \delta U / \delta e &= 0 \\ e^* &= [(1 - \tau) A / 2]^2 \end{aligned} \quad (15)$$

Since, according to the model, total output, Q_e , in equation (12), is strictly dependent upon the entrepreneur's work efforts, e , then it is easily seen by equation (15) that the highest the expected value of τ the lowest the stimulus of the farmer to work the land. In simple common words, it is understandable that people will reduce their propensity to work hard if they are expecting that a significant portion of their productive efforts is not going to be enjoyed by them. Hence, in this instance, the entrepreneur maximizes his or her utility by preferably engaging in leisure activities.

The model outlines how the use of property rights channels human behavior to secure optimal productive efforts. These can only be reached when a sense of security towards the outcome of productive efforts is felt by the economic agent. Note that if the weight of stealing or taxation is too high, the producer is stimulated to both avoid productive efforts and engage himself in further activities of a negative economic nature – the kind of deeds the individual engages to immediately improve his or her well-being but the person's self-welfare decreases if every other member of society acts the same way. The way property rights are secured and enforced surely deserves the continuous attention of both micro and macroeconomics theory.

Nonetheless, the scope of property rights to secure optimal productive efforts extends far beyond the entrepreneurs' welfare. We still need to inquire if the economy has the best possible institutional environment to foster overall welfare. Hence, it is relevant to analyze how expropriation concerns affect every productive unit of the economy. Particularly, it is worth identifying when it is optimal for a citizen to choose between embracing entrepreneurship or working for an employer.

The problem of the individual who has the capital to start a business but considers finding a job instead may be conceptualized following the same reasoning. We begin considering a laborer who can choose between several employers and will be yielding a portion of his total production. After finding his job, he or she commits effort (time), where effort $e \in [0,1]$, of which the laborer has an endowment of working time of \bar{e} , where $\bar{e} \leq 1$, and yielding an output B . Analogously, the resulting output B has a probability of occurrence of $e^{1/2}$ and may be zero with a probability of $1 - e^{1/2}$. Therefore, the expected output produced by the employee is:

$$Q_w = Be^{1/2} \quad (16)$$

The employee is also assumed to be free from income effects or risk considerations.

The employee is assumed to be maximizing his or her utility function, U' , which is also linear in consumption, c , and leisure, l . Thus, we assume the employee is subject to the condition $e \leq \bar{e}$ and wants to maximize his or her working efforts, e . Consequently, when the employee can grab all his production, the employee's problem is as follows:

$$\begin{aligned} \max U'(c, l) &= c + l = Be^{1/2} + \bar{e} - e \\ \text{subject to } &(\bar{e} - e) \geq 0 \end{aligned} \quad (17)$$

However, it is expected that any employer considering hiring a new employee is aiming at a portion of the employee's production, β , otherwise, the employer would not bother to assume such a responsibility. In common words, it will always be expected that an employer only is prone to hire a new employee if he or she can profit from using the additional work effort. Therefore, a parcel of the employee's production is expected to be taken away by the employer. Hence, the employee's problem is presented as follows:

$$\begin{aligned} \max U'(c, l) &= c + l = (1 - \beta) Be^{1/2} + \bar{e} - e \\ \text{subject to } &(\bar{e} - e) \geq 0 \end{aligned} \quad (18)$$

Solving the maximization problem while considering the constraint $e \leq \bar{e}$, we obtain the optimal choice of employee's work efforts:

$$\begin{aligned} \delta U'/\delta e &= 0 \\ e^* &= [(1 - \beta) B / 2]^2 \end{aligned} \quad (19)$$

An employee's optimal productive effort depends as well on the portion of his or her production that is taken away by the employer. It is, therefore, clear that under an economic regime of communal property, it is difficult to reach the optimal production level given the existence of worker heterogeneity. Likewise, the medieval socioeconomic structure was hardly reaching the best practices for improving overall welfare. At those times, people could not choose between engaging in entrepreneurship or working for someone else while the owner of their lands was arbitrarily taking the production away from them. And, it is fair to state that neither of them, servant or landlord, had several other options.

To evaluate if an individual chooses to be either an employer or an employee we need to compare the resulting optimal choice of the individual when acting as an entrepreneur, e^* , with the resulting optimal choice of the individual when acting as an employee, e^{**} . Hence, under the model assumptions, the individual will be indifferent between each of the options when $e^* = e^{**}$. Consequently, the individual will be indifferent between engaging in entrepreneurship and accepting a job as a regular employee when:

$$(1 - \tau) A = (1 - \beta) B \quad (20)$$

Which is the same as:

$$\frac{A}{B} = \frac{(1 - \beta)}{(1 - \tau)} \quad (21)$$

Equation (21) provides a very interesting result. If we consider that the individual can produce the same output either working as an employee or as an entrepreneur then the individual opts for being an employee only if the amount of total production that is expected to be withdrawn from him by the potential employer, β , is lower than the amount of expropriation, τ , which he expects to be facing when engaging in entrepreneurship. Moreover, if the individual understands he is rather productive as an entrepreneur than as an employee, then he will be seeking an employer only if the amount of his total production withdrawn by the employer, β , is smaller enough to offset the amount of expropriation of total production, τ , which he expects to be facing when engaging in entrepreneurship (in equation (20) if $A > B$ then $\beta < \tau$ for the indifference condition to hold). In common words, for an equal total expected output, working either as an entrepreneur or as an employee, the individual prefers to seek a job instead of creating his or her enterprise if, and only if, he or she expects the new employer to take from him or her less than the government does by taxation upon entrepreneurship.

In this instance, it is possible to set up an economy that maximizes overall welfare considering every society's member. We can model an economy with four types of people: 1) the government, which maximizes taxation, τ ; 2) the farmer, who maximizes his or her utility, U_e ; 3) the employee, who maximizes his or her utility, U_w ; and 4) the unemployed person, who lives at the expenses of both the farmer and the employee by getting an even portion of their production, γ . By labeling the farmer's work effort as e_e and the worker's work effort as e_w , we have $U_e = Q_e + \bar{e} - e_e$, $U_w = Q_w + \bar{e} - e_w$, and the welfare of both employer and employee is given by $U_t = U_e + U_w$.

Employer and employee's welfare is thus

$$U_t = (1 - \tau - \gamma) (A e_e^{1/2} + \beta B e_w^{1/2}) + \bar{e} - e_e + (1 - \beta - \gamma) B e_w^{1/2} + \bar{e} - e_w. \quad (22)$$

The society will be maximizing overall work efforts' utility, U_t :

$$\begin{aligned} \max U_t &= (1-\tau-\gamma) (A e_e^{1/2} + \beta B e_w^{1/2}) + \bar{e} - e_e + (1-\beta-\gamma) B e_w^{1/2} + \bar{e} - e_w \\ \text{subject to } &(\bar{e} - e_e) \geq 0 \\ &(\bar{e} - e_w) \geq 0 \end{aligned} \quad (23)$$

Looking at U_t , since it is always decreasing with γ , it is interesting to outline that overall work efforts' utility is always decreasing with the increase of unemployment, and maximizing overall welfare requires a full-employment economy. Further, the marginal utility of both employer and employee decreases to the right of the point of optimal work effort. Specifically, we have

$$\delta U_t / \delta e_e = (\frac{1}{2}) (1-\tau-\gamma) A e_e^{-1/2} - 1 \quad (24)$$

$$\delta U_t / \delta e_w = (\frac{1}{2}) [(1-\tau-\gamma)\beta + (1-\beta-\gamma)]B e_w^{-1/2} - 1 \quad (25)$$

and

$$\delta U_t / \delta e_e > 0 \Rightarrow e_e < [(1-\tau-\gamma)A]^2 / 4 \quad (26)$$

$$\delta U_t / \delta e_w > 0 \Rightarrow e_w < [((1-\tau-\gamma)\beta + (1-\beta-\gamma))B]^2 / 4 \quad (27)$$

Maximizing overall work efforts' utility in an economy exhibiting unemployment, as in equation (23), leads us to find the optimal work efforts of both the farmer and the employee, e_e^* and e_w^* :

$$e_e^* = [(1-\tau-\gamma)A / 2]^2 \quad (28)$$

$$e_w^* = [((1-\tau-\gamma)\beta + (1-\beta-\gamma))B / 2]^2 \quad (29)$$

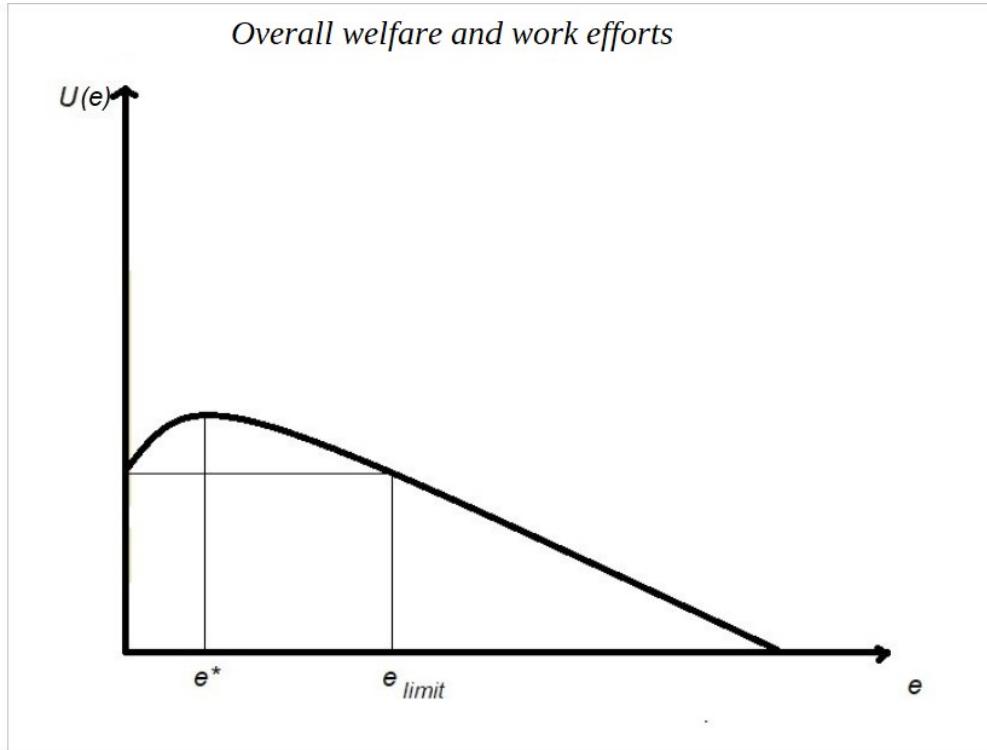
In equations (28) and (29) it is easy to realize that the optimal work efforts, e_e^* and e_w^* , of both the farmer and his or her employee, decrease in an economy with unemployment. Figure 26 illustrates the shape of the evolution of overall welfare with productive work efforts.

In this static analysis, the four citizens cannot change their condition. The farmer is maximizing his or her utility while considering several variables: the taxation amount, τ , he or she is facing; attending his or her contribution to unemployment, γ ; considering the potential output A ; and, accounting for the parcel of the employee's work effort, β , he or she is entitled to. The employee, in turn, is maximizing his or her utility according to the following: the given conditions of wage, $(1-\beta)$; the unemployment contribution, γ ; and, the potential output B . Therefore, the result given by equations (28) and (29), either with or without a full-employment economy, further outlines the result of equation (21) because it is now plain that economic agents' work efforts are magnified if they all are given the opportunity of holding executive power.

Adding dynamics to this model highlights that overall work efforts' utility can be boosted under an institutional environment that simultaneously enacts a full-employment economy while allowing all society members to hold executive power to act as entrepreneurs or as employees. Further, it is even more clear that the potential outputs A and B are important variables in the economic agent's decision-making process, leading to the conclusion that people's qualifications and talents are crucial for their choices aiming at maximizing payoffs. By the same token, the way the economy enables its members to transfer property among them becomes paramount.

The results given by equations (21) to (29) have deep economic consequences and lead to many important conclusions.

Figure 26.



Source: Author's own creation

First, equation (21) shows that economic agents' committed work efforts rise with both government expropriation decreases and employers' increases in the wages paid to their employees. This result is consistent with prior research which finds a positive and significant statistical relationship between the real wage and the laborers' predicted effort.

Second, in equation (21), for the indifference condition to hold it is required that the employees' total production capacity approach their capacity as entrepreneurs; otherwise, they will be prone to accept higher tax rates when acting as entrepreneurs. This leads to reduced work effort commitment, and, accordingly, it is economically inefficient. Therefore, increasing individuals' professional qualifications is paramount for enhancing economic efficiency.

Third, when we create the conditions for economic agents to opt between engaging in entrepreneurship or seeking a job as regular employees, greed will be the driver of economic agents' behavior. Every person will be committing work efforts according to his evaluation of the maximum output he or she can produce, given his or her utility function. This leads each person to reason in terms of his or her best efforts, rather than just considering the maximum wage he or she might get by complying with a nine-to-five regular job. The individual will be reasoning in terms of his or her productive ability rather than thinking in terms of his or her expropriation ability of a parcel of the employer's potential output, as it may happen currently, and constitutes negative opportunistic behavior. However, this optimal productivity result can only be reached if everyone is free from risk considerations between being a regular employee and engaging in entrepreneurship.

Fourth, the combined results of equations (15), (19), (21), (28), and (29) further outline the importance of having a flexible labor market for increasing productivity; where 'flexible labor market' means the ability of employers and employees to freely set both work time and wage.

Every human being is unique which means that every person has his or her unique optimal work effort leading to the highest individual productivity. Regardless of individual idiosyncrasies concerning preferences and risk, the individual is engaging in entrepreneurship every time an employer offers a too-small salary compared to what the individual expects to be earning as an entrepreneur.

Fifth, the institutional environment that removes risk considerations from economic agents' minds and enables every person to think in terms of his or her best productive efforts enacts a full-employment economy. When it comes to labor relationships, the literature on micro and macroeconomics acknowledges the existence of contracting frictions imposed by economic agents' behavioral responses, such as adverse selection and moral hazard, and emotional choices, induced by either market incentives or intrinsic motivation. These results show that efficient adjustments in the economic agents' effort require that employers be free to fire employees and employees need to be safe to engage in another professional occupation. Further, the contract between employer and employee needs to be freely negotiated, given the heterogeneity of the entire workforce. A full-employment economy induces positive opportunistic behavior when combined with people's freedom to act.

Finally, ensuring a full-employment economy cannot be a government's liability. Note that the highest the expropriation amount, τ , the lower the employer's work efforts. Cumulatively, the higher the expropriation amount, τ , the lower the wage employers have to pay to an employee to make him indifferent between choosing to accept the employer's job or establishing himself as an entrepreneur. Hence, if the expropriation amount, τ , raises, then both employer and employee reduce their work efforts. Consequently, the economy will not be supplying as many goods and services as it can. A government cannot ensure a full-employment economy unless it collects taxes for financing that expense – in equation (22) the existence of involuntary unemployment ($\gamma > 0$) always leads to a decrease in overall welfare for both the farmer and the employee. Accordingly, only the private sector can efficiently ensure a full-employment economy.

In summary, we have reached several important conclusions: 1) granting private property rights is necessary for maximizing overall welfare; 2) granting executive power to every society member is necessary for reaching the optimal productive level; 3) granting a full-employment economy is mandatory to maximize productivity; 4) full-employment needs to be secured by the economy's private sector; and 5) maximizing productivity requires a zero tax economy. This surprising result outlines that, rather than taking the institutional environment as given, it is paramount to continue monitoring it to check out whether it is truly the best for ensuring overall welfare or whether the institutional environment can be improved.

An exercise that the economist must do is to inquire about the possibilities associated with both positive and negative opportunistic behavior combined with some alternative institutional rules. We have just concluded that the use of property rights positively combines with enabling people to choose between engaging in either entrepreneurship or working for someone else. Moreover, we realize that this is both an individual and heterogenic choice whose heterogeneity needs to be considered. Hence, despite being a novel approach, understanding how heterogeneous citizens detect market opportunities becomes paramount.

Until now, the equations of 'how it must be' have left the role of money apart. But money is paramount to safeguard overall welfare. Therefore, the equations of what are the rules that boost the financial system's effects on economic development and overall welfare must be brought to the analysis.

As outlined above, equation (6), by stating the tautological identity that $M=PQ$, emphasizes when there is economic development in society.

Adding someone to take care of monetary subjects in the economy, and following prior methodology, we can model an economy with five types of people: 1) the government, which depends on taxation, τ ; 2) the farmer, who maximizes his or her utility, U_e ; 3) the employee, who maximizes his or her utility, U_w ; 4) the unemployed person, who lives at the expenses of both the farmer and the employee by getting an even portion of their production, γ ; and 5) the monetary authority who survives by producing new money. As done previously, we label the farmer's work efforts as e_e and the laborer's work effort as e_w . Hence, we are considering that the government, the unemployed person, and the monetary authority want to maximize their expropriation ability of the goods produced by the farmer and his or her employees. Moreover, we consider that the society finds a way of enjoying scale economies, α , and that the portion of the economy's total production that is taken by the monetary authority is given by Φ , where $\Phi \in [0,1]$. Society has to maximize its overall welfare by deciding the number of work efforts to put through. Thus, we consider the effect of the monetary authority on equation (22). Overall welfare is thus given by

$$U_t = (1-\tau+\alpha-\Phi)(A e_e^{1/2} + \beta B e_w^{1/2}) + \bar{e} - e_e + (1-\beta-\gamma+\alpha-\Phi)B e_w^{1/2} + \bar{e} - e_w \quad (30)$$

Note that the monetary authority controls the money in circulation in the economy but does not produce any goods to be consumed. Accordingly, a portion of the goods that are produced in the economy must be consumed by this entity. Moreover, as illustrated by equation (9), if new money is created exclusively for consumption purposes, then, according to equation (9), society only gets a direct and proportional price increase. Desirably, the creation of new money can be used to finance new business endeavors which might allow for reaching scale economies. When this is a fruitful action, the economy gets $(\alpha-\Phi) > 0$, and registers an overall welfare improvement.

The society will be maximizing overall welfare, U_t :

$$\begin{aligned} \max U_t &= (1-\tau+\alpha-\Phi)(A e_e^{1/2} + \beta B e_w^{1/2}) + \bar{e} - e_e + (1-\beta-\gamma+\alpha-\Phi)B e_w^{1/2} + \bar{e} - e_w \\ \text{subject to } &\bar{e} - e_e \geq 0 \\ &\bar{e} - e_w \geq 0 \end{aligned} \quad (31)$$

The optimal work efforts of both the farmer and the employee are given by e_e^* and e_w^* :

$$e_e^* = [(1-\tau+\alpha-\Phi)A / 2]^2 \quad (32)$$

$$e_w^* = [(1-\tau\beta-\gamma(1+\beta)+(\alpha-\Phi)(1+\beta))B / 2]^2 \quad (33)$$

It is worth outlining that society needs to maximize equation (30) to maximize overall welfare. At first sight, it may seem that we are only maximizing the utility of the workers – whether the entrepreneurs or their employees. However, we are assuming that every society member maximizes his or her utility, which depends on both consumption, c , and leisure, l , such as $U(c,l)$. Hence, the members of the government, the unemployed person, and the monetary authority cannot consume unless employers and employees produce at their best. Moreover, if the work of the government and the work of the financial authority is useful to the whole society, then their work efforts are entirely captured by the production function, i.e., by $Ae_e^{1/2}$ and $Be_w^{1/2}$, and the outcome of their work efforts is exchanged with the outcome produced by the remaining society members, as it happens with everybody else. Particularly, in this instance, this framework captures the services of guardians of values and payment facilitators that banks deliver to society and/or the work provided by those who manage public infrastructures.

The results (32) and (33), obtained from maximizing equation (31), are fundamental for Economics. They stand out that, to maximize overall welfare, some variables in the economy need to be close to zero, as much as possible. These are τ (taxation, expropriation, or stealing), γ (unemployment), and Φ (the portion of the production taken by the monetary authority). Furthermore, equations (32) and (33) highlight that the existence and interference of the monetary authority can be useful to improve overall welfare if, and only if, it positively contributes to economies of scale. This contribution must be in such a way that the gain provided by the increase in production offsets the cost of a monetary authority. Otherwise, there is no need to create new money at all. This result is aligned with Joseph A. Schumpeter's guideline which poses that only the entrepreneur needs credit (1934). And, today, Normative Economics is still in its infancy.

The effectiveness of the chosen rules to foster overall welfare depends on how they channel opportunistic behavior into a positive mode. Concerning monetary affairs, it is, therefore, clear that the monetary framework must be tweaked to ensure that the creation of new money is a faculty reserved for granting producer credit only. Moreover, it is important to mention that having a zero-tax economy is not the same thing as giving up on enjoying public services. Note that we can have a public service provided by a public enterprise working exactly as a private company does. For instance, similarly to the monthly fee that communication firms take from their customers, a public company might collect a monthly fee for cleaning the streets or keeping a public transportation service. But, the public service shall remain operational just as long as it is useful for society. Otherwise, it will be shut down without further losses. Hence, a public company can operate exactly as a private one does. And that sets up a crucial evolution in any society.

I consider the equations (32) to (33) as “the equations of how it must be.” The last sentence is devoid of any type of arrogance or imposition on anyone. However, I think of them as “the equations of how it must be” for they do not fit the category of “should be.” The equations are the result of sheer economic analysis and do not represent any kind of subjective analysis. These are unbiased free equations whose results do not favor particular interests and are rather meant to safeguard overall welfare. And, once understood, they will be unanimously accepted.

This theoretical framework explains why the overall welfare depends so much on the institutional environment that society chooses to abide by. It highlights that we need to pursue a full-employment economy, safe from expropriation risks, and where money is wisely used to foster continuous rises in productivity. Moreover, these equations extend the economist's analysis far beyond the limitations of the price-quantity framework and allow the identification of the core reasons why economic development disparities between different countries remain over time. Most of all, these equations explain how and why the greatness of a society does not lie in what each person can take from others, but rather depends on what each person can give to others. And, to mankind, wide-spread this understanding is a significant civilizational step up.

Consecrating individual freedom to take advantage of the available opportunities is, therefore, mandatory. Despite our universal fear regarding other humans' negative opportunistic behavior, there is no doubt that negative opportunistic behavior can be inhibited. This happens when the regulatory system allows the individual to perceive a potential decrease in the gain that seems to be available in case of negative behavior. Since to improve overall welfare, society needs people to engage in every economic activity that provides abnormal profits at once, it is not possible to reach economic efficiency without a focus on “enabling rules.”

This means that governments need to foster cooperation among every economic agent, that the financial system must be a very proactive actor in supplying purchasing power to every producer

that needs it, and that the private society needs to be engaged in disclosing every information that can contribute to either reducing production costs or increasing selling-prices. This means that every individual interest is taken care of by the entire society.

Every person is the product of a genetic background with an aggregate of cumulative memories and sensations experienced throughout life. Those are where beliefs consolidate and multiple skills develop. Accordingly, every human being is unique. As exclusive as every person is, and albeit the environmental circumstances might be the same, no one can detect an opportunity simultaneously, or take advantage of it in the same way. Often, it is by combining several different points of view regarding the best way of grabbing an opportunity that the optimal solution can be found. Learning from each other is thus required for all society members who aim to thrive together.

This need for knowledge sharing does not fit with some current practices of our regulatory system. A very illustrative remark was found by Timothy F. Bresnahan who posed that “*the theory predicts that there will be alternative periods of price war and successful collusion*” (1989, p. 1024) while Peter C. Reiss and Frank A. Wolak outlined that “*most researchers studying competition do not know when firms are competing or colluding*” (2002, p.42). The value of cooperation is yet to be entirely understood and the way wars evolve on our planet is symptomatic of our bounded rationality. That is why it is so important to inquire about some practical rules and procedures that consecrate the virtuous regulatory system that we have seen above in “The equations of how it must be” for those are the steps that might enable society to perceive the value that is there to be gained while sensing the opportunity cost of not doing it. Ultimately, that is what Normative Economics is all about: Answering how to raise the unanimously accepted regulatory system that enables society to reach a healthy perfectly competitive economic environment.

9- Future implications

The main novelty inherent to Normative Economics is the awareness of the supreme efficacy of a benefit-based regulatory system over a penalty-based regulatory system. The former starts to be drawn to safeguard an overall benefit that society values positively while the latter focuses on inhibiting or eradicating negative opportunistic behavior. The benefit-based regulatory system enhances all the good that the legislator wants to capture that favors the entire society while the penalty-based system focuses on all the evil that the legislator abhors. The benefit-based system reaches higher levels of efficacy because, once enacted, the targets of the regulation feel the benefits of compliance and tend to faithfully abide by them. Conversely, under the penalty-based system, the compliance rewards are often reserved for the legislator while the targets of the regulation tend to evade compliance. These differences are meaningful to the particular study of Microeconomics and Macroeconomics and severely impact the levels of overall welfare that the human society can reach.

This work frames Normative Economics as the study of the adequate regulatory environment to foster positive opportunistic behavior while inhibiting negative opportunistic behavior. This poses Normative Economics under a different scope than the one that is usually attributed to what is considered to be normative economic theory. For instance, Richard Thaler (1979, p. 39), states that normative theory “*describes what rational consumers should do*” while the author particularly stands out that individuals do not always behave rationally. Herein, not only the lack of rational behavior is addressed by Normative Economics but its action as a determinant of individual behavior is both explored and exploited.

The future implications of deepening the study and use of Normative Economics comprehend theoretical and practical effects. At the practical level, there are disparate effects that impact the regulatory systems of private corporations, the development of a legal framework to foster positive opportunistic behavior and inhibit negative opportunistic behavior, and the development of Artificial Intelligence and its role as a tool of assistance to support the human decision-making process. Considering the theoretical level, the methodological development and adjustment of rules and regulations must be continuously fine-tuned to fit society’s needs as soon as possible. Some of these will be detailed below.

Retrieving the methodology identified in Chapter 4, and picking up a few practical examples to analyze how adequate is our current regulatory system to reach the goal that is meant for, we will proceed with the following four crucial steps: 1) identifying the goal to be reached (i.e., knowing what kind of value is society trying to capture by choosing to abide by a given regulatory system); 2) identifying the type of regulatory system that is being used to reach the goal; 3) identifying the full range of resources that are required to enforce the regulatory system; and 4) identifying the type of opportunistic behavior that is returned by the regulatory system. This methodology will be applied to analyze three practical legal frameworks our global society is currently accepting to abide by. These are: 1) how the worldwide insurance industry tries to avoid negative opportunistic behavior; 2) the effects of copyrights on opportunistic behavior; and 3) the effects on opportunistic behavior of how the disparate legal frameworks deal with contractual breaches. These are enough to elucidate the scope and merits of Normative Economics. Afterward, we will identify some possible specific norms to deploy the “rules of how it must be” and conclude by referring to some of the gains in economic efficiency that, inherently, occur. Ultimately, the practical effect of Normative Economics is to foster positive opportunistic behavior while inhibiting negative opportunistic behavior.

The insurance industry is, by definition, a mutual effort of the entire society to protect all its members against a possible misfortune that some citizens might face. Accordingly, everybody is providing a little contribution to ensure that society has some spare resources to repair the damages a disaster might cause to any citizen. By this token, for a given probability of occurrence of a disaster, the higher the number of citizens contributing, the lower the amount that each person must provide to secure the welfare of the misfortune person. Following our methodology, we can easily see that society's goal is to have every citizen protected against the highest agonies.

However, quite often, the insurance industry uses it to increase the insurance contribution of the individual who has presented a claim. For instance, regarding the car insurance business, someone who is responsible for causing a car accident and/or who presents a claim on his or her car self-damages is going to be asked for a higher contribution on his or her next insurance payment. In this case, the legislator abhors the existence of claims and tries to induce each, and every citizen, to avoid it by applying a penalty over those who do it. This monetary penalty is applied regardless of the financial power of the individual being targeted. Moreover, the penalty applies despite the insurance contract having performed its social and economic role exactly as it was conceived. Hence, acknowledging that human creativity seeking value knows no boundaries, the legislator is only concerned with the idea that some persons might be faking the disaster and simply trying to take advantage of the insurance company. Moreover, if the contribution (the insurance premium) that the individual is asked to provide is too high and he or she cannot afford it, then society is going to be less protected against a potential car accident involving this person. These are attributes of a penalty-based regulatory system that cares mainly about eradicating what is considered to be negative opportunistic behavior by the legislator.

Worldwide, artificial intelligence tools have been developed to assist the entire insurance industry in the identification of the number of car claims that each person has presented throughout his or her life. A bureaucratic system has been put in place to prevent insurance firms from asking a too low price for the risk that they think each specific customer might be presenting. Either way, resources are required to enable the insurance firms to apply this regulatory system.

In this car insurance example, positive opportunistic behavior happens when every citizen freely seeks to hold a car insurance contract to both be protected and protect the remaining citizens against any potential accident. Hence, the car insurance contract did not have to be mandatory for every citizen to be perceiving its benefits. Conversely, drastic negative opportunistic behavior happens when nobody wants to contribute to the insurance industry and citizens only run to acquire an insurance contract after having had a car accident, trying to deceive the insurance firm. Additional negative opportunistic behavior is fostered by the insurance firms when they do not duly compensate their customers for the damages they claim. Both behaviors lead the entire society to live worse the higher the number of persons acting alike, i.e., fewer persons will be prone to hold the car insurance contract and, consequently, the cost of each car insurance contract must be higher for the total cost of claims is to be split between a small number of contributors. As we know, negative opportunistic behavior begets negative opportunistic behavior, and the way positive opportunistic behavior is fostered is also under inquiry.

This specific regulatory system is weak in what concerns inducing positive opportunistic behavior. First, the social and economic benefits that arise from every car holder being an insurance car holder as well start at the diminishing costs that are involved in repairing the damages that might come out from a car disaster compared with a situation where the citizens cannot rely on anybody to help them solve the situation. However, someone who does not have a good historical background of driving without claims cannot enjoy a cheaper contract. Hence, regardless of the true risk present

to the insurance firm, society risks leaving some members away from this protection, and the higher costs involved in the absence of a car insurance contract touches everybody. Second, positive opportunistic behavior would be pursued by society if every citizen is induced to drive carefully by the applied regulatory system. However, by asking for a higher premium in case of a claim, insurance firms are inducing customers to engage in a win-loss evaluation where fraud is justified if the compensation that the person expects to grab from the insurance firm is higher than the increase in the cost of the insurance contract. Therefore, people are not effectively persuaded to drive responsibly just because a more expensive car insurance contract lies ahead. The outcome is that fraud exists, people driving without holding a car insurance contract are also a reality, and, since the average price paid by each citizen always corresponds to the total amount of car accident compensations paid in a given period divided by the total number of contributors, plus the cost of the insurance firm services, the lowest the number of citizens holding a car insurance contract, the more expensive each will be.

In reality, a penalty-based regulatory system is enacted and it is reaching poor results. These results are below the expectations of the legislator because the legal framework does not reach the goal it was meant for. It does not ensure the protection of the entire society and it does not avoid negative opportunistic behavior. Even worse, it does not ensure the lowest possible cost for the car insurance service, and resources are being wasted by society.

Tweaking this penalty-based system into a benefit-based system requires some subtle legal changes. Firstly, the legislator aims to have the entire society protected. Accordingly, it does not make sense that the individual contribution of some persons is different than that of others. Secondly, the reward of a car insurance contract is concrete only when the car accident happens. If the legislator aims at inducing the citizens to drive carefully, rather than increasing the cost of an insurance contract in case of a claim, a much more effective norm is to apply an insurance deductible in the benefits that the person might be entitled to in case of a car accident. For instance, the legal framework might be enacting the insurance firm to compensate 100% of the damage suffered in a car accident if the person has never caused a car accident before, 90% of the full compensation if the person has caused one accident in the last three years, 80% of the full compensation if the person has caused two accidents in the last three years, or some other clearly perceived, and previously known, reduction in the benefits of holding a car insurance contract in case of persistent negative opportunistic behavior. Under this benefit-based regulatory system, the legislator is focused on the benefits that the legislation is meant to bring to the entire society, it treats everybody alike regardless of individual specificities, it induces people to avoid claims whenever possible, and it induces people to drive responsibly for it is impossible to previously forecast when an accident is going to happen and how much it might cost. The greatest merit of a benefit-based regulatory system is that it transposes into the individual sphere the need to control self-behavior. And that is something that a penalty-based system cannot do.

This example can easily be quantified to understand how much cheaper can the entire society enjoy a car insurance contract under a reward-based system. Notice that, by perceiving that everybody lives better by holding this benefit, every citizen is willingly acquiring a car insurance contract. It does not have to be mandatory. Moreover, making it legally mandatory does not change the fact that some citizens may not afford it, and society remains, therefore, still unprotected.

The Value Function tells us that the intensity of how our desire to avoid losses is 2.0 to 2.5 times more intense than our desire to grab a potential gain. Moreover, it shows that we rather have a certain gain compared with an uncertain higher potential gain. If the legal framework is changed following something similar to the above proposition, every citizen will be aware that the remaining

are being as responsible drivers as they can, and each will likely claim the enforcement of a car insurance contract only when it is needed. This emotional mindset leads the benefit-based system to overcome the results reached by the penalty-based system. However, both regulatory systems require the assistance of similar technological resources, and the benefit-based system might even be more demanding. Increasing our human social ability to cooperate starts at the understanding of how each person channels self-behavior by following the Value Function.

Another example of the practical application of Normative Economics's fundamentals is provided by the copyright legal framework our global society accepts to abide by. Specifically, society is aiming at inducing people to be creative, and innovative, and to extend the benefits of their inventions across the entire society. As usual, the understanding of the legal framework society accepts to abide by is easier when we know the history that lies behind it.

The seed of copyright protection was launched in Florence, Italy, in the year 1421. An individual invented a device to transport marble and realized that he could only guarantee a high profit from the exploitation of that idea if the remaining society was prevented from building similar devices. So, he convinced the local government to recognize his copyright and ensure the exploitation of his invention on an exclusive basis, during a given period. Later, in 1474, in Venice, Italy, the first exploration license appeared. But it was only in 1790, in the United States, that a country passed a patent law that guaranteed its inventor the right to exploit his invention under a monopoly regime.

This was the first move on the part of the inventor – getting society to protect him to deliver an incentive to continue to innovate. Cumulatively, society realized that, by doing so, the patent falls into public knowledge. This situation allows for its improvement and awakens the entire society to other related inventive possibilities. Despite being aware that the inventor is provided with the possibility of exploiting the other members of society with his invention, the rule of exclusivity is created to reap benefits that may exceed this cost.

The copyright legal framework defines that a penalty will apply to someone who dares to produce and sell a good or service that was invented by someone else and is currently under the enacted copyright protection system. This is considered negative opportunistic behavior because some individuals take advantage of the genius and inquiring effort of others, whose work might not grab due compensation. Accordingly, the more this happens, the lower will be each person's propensity to pursue this type of work. And everybody will be living worse. In this case, the punishment of the offender does not apply when he or she is entitled to the benefit. The penalty only occurs if the offense is detected by some monitoring system deployed by the legislator. Moreover, every citizen must abstain from using the invention during the period of protection, which confers a situation where a hierarchic structure is in place, and some individuals of society are allowed to produce and sell the invention while others are not. Hence, there remains no doubt that our current copyright legal framework is based on a penalty regulatory system.

Two types of resources are required to manage the worldwide copyright legal framework. One, it is required to define a central location where each invention is reported, and recorded, and its character of novelty and usefulness is validated. This poses a challenge regarding the quality, competence, and interests of the persons with such responsibility, which is relevant when we realize that the scope of human interests and inventions is so wide. And two, it demands a monitoring system at the global scale to ensure that no invention is used illegally during the period of protection. Since value-seeking individuals face this legal framework, the technological development available to assist the legislator conditions society's effectiveness in reaching its goal.

It is relevant to analyze the effects on society arising from the current patent registration rules. Specifically, an individual who conceives an unprecedented product, which is not a mere combination of existing techniques, and whose invention has recognized practical applicability, can register his patent to ensure that the disclosure, manufacture, and exploitation of the invention will be controlled by himself or herself, during a perfectly defined time.

Basically, we have two types of patents. The invention patent, which fully fits the above definition and usually has a duration of twenty years, and the utility model, which reflects the creation of improvements applied to existing products and has a usual duration of ten years. In essence, the registration of patents aims to create an incentive for people to get involved in research and development activities of new technologies, and be duly rewarded for this effort. It is intended to ensure that society will enjoy a greater number of inventions than those that would supposedly happen in the absence of this mechanism. The regulatory system is intended to encourage positive opportunistic behavior.

However, in practice, and given that an opportunity is simply a favorable circumstance that is taken advantage of by those with executive power to act immediately in the face of perceived conditions, the effects of the use of patents under the economy's current rules of operation can have negative, and very harmful, effects.

The inventor can only benefit from the invention if one of two circumstances occurs: Either the individual has the financial power to properly exploit his invention or the person is forced to sell his invention to the highest bidder he or she can get within a given period. In the first case, the existence of the patent registration mechanism, as it currently operates, becomes redundant. Society will always benefit from the invention regardless of the existence of a patent protection record. In the second case, in which the inventor is unable to place his creation on the market and has to sell it to those who can, this invention is acquired by those who are already active in that market niche with other products. In this situation, the new invention is often put on hold and, instead of being acquired to be commercialized, it is acquired to preclude its commercialization. The purchaser only intends to prevent other people from competing with the obsolete and lower-quality products that he or she is already selling in the market. The acquirer adopts negative opportunistic behavior, that harms society, while further harming him or her the greater the number of these actions that are replicated by other people in society.

A patent registration mechanism is a tool through which society tries to encourage the individual who "can" be creative, to be so. However, as always happens when faced with institutional processes that seek to condition citizens' choices, opportunities open up, in the positive and negative sense, and their final effects are only fully understood when society engages in attitudes of cooperation.

There are now numerous useful inventions put on hold. Cumulatively, some firms identify useful inventions and wait for them to expire, to use them. The registration of a patent, or utility model, requires the payment of an annual fee to maintain the protection of the intellectual property of its inventor, and this protection expires in the absence of payment or at the end of the protection periods of twenty, or ten years, respectively. In addition to gross violations of the intellectual property protection mechanism, which can only be resolved in court, this form of action by society also does not have the desired positive opportunistic behavior intended to be achieved when the idea of protecting intellectual property arose. Negative opportunistic behavior has also played its part.

The technological evolution of society allows us to find increasingly rational ways of controlling society's emotional reactions. The creation of legislation on the use of patents and utility models raised the need to adapt control and penalization mechanisms, to avoid conceding them immediate ineffectiveness. A first need arose to demand obedience. Later, even scrupulously obeying what the law advocates, some companies acquire an invention to prevent it from being placed on the market to compete with their current products. Society found perverse ways of using the law. And it is this fantastic ability of human beings to take advantage of opportunities, in the positive and negative senses, that leads us to progress when we have the humility to realize that there is a continuous need for attention and adaptation. Today, the smart use of software makes it possible for global society to take another step toward progress.

The aim is the continuous use of human genius. Thus, to duly reward the inventive effort, while encouraging the putting into practice of each new invention, in the shortest possible time, we can resort to the "intelligent use of software," and make a new move, in a positive mode.

Today, it is possible to create a central register of patents and utility models, assigning each new invention a unique registration, with its dissemination shared on a global scale. Cumulatively, given the advanced state of technology, it is also possible to guarantee that each unit's use of the invention provides its creator with an income. For example, for each unit sold of a good using this invention, the inventor will receive one cent, or one euro, or ten, or whatever the inventor determines. Now, instead of guaranteeing the inventor temporary exploitation under a monopoly regime, which only works well when the inventor has the financial capacity to exploit his invention, we can guarantee that all people who want to do so can also exploit the invention. And do it right away. On the one hand, the inventor, who does not have the financial capacity to exploit his invention, no longer needs to sell it to be rewarded for his or her effort. On the other hand, the investor, with the financial capacity to exploit an invention, does not have to pay in advance a huge amount of money for his or her exploitation right. Neither the inventor runs the risk of selling his patent at a price too low, nor the investor is forced to take a risk too high in buying an invention that he does not know yet if it will be successful on the market. The development of technology allows humanity to go much further than what we have done so far.

In this latter scenario, a benefit-based regulatory system will be deployed. Society will be focusing on the benefit inherent to the goal it was meant in the first place, but fosters individual autonomy and performance, and remains free of biased interests. However, it is still demanding an efficient monitoring system, that can only be adequate under a highly developed technological environment.

Ultimately, the goal of any regulatory system is to foster positive opportunistic behavior while inhibiting negative opportunistic behavior. When we analyze economic interactions, the nature of a transaction is always under scrutiny. Consequentially, it is required to analyze the effects on opportunistic behavior of how the disparate legal frameworks deal with contractual breaches.

Following the prior methodology, we know that a contract is a way society members have found to safeguard the outcome expected by both parties involved at the beginning of a negotiation process is exactly what they get when the transaction is completed. Hence, a reward to both parties is expected as an outcome of the agreement. As we have seen above, two types of negative opportunistic behavior might loom out. One, it happens when rather than cooperating to fairly split the gain inherent to the trade, the parties compete with each other to get "the biggest slice of the cake" up to a point that even endangers the possibility of reaching an agreement. And two, when people engage in deceptive practices that put in peril trustable economic relationships and, therefore, ruin the possibility of future transactions. Despite society's awareness that negative

opportunistic behavior might set in, an efficient regulatory system can never lose sight of the positive goal it was born for.

The effectiveness of a regulatory system is, therefore, under scrutiny. A legal system is effective when all members of society realize that breaching a contract does not pay. For a crime to be rewarding, we have to raise some considerations: 1) is the person who commits a crime above the law?; 2) is the law providing for a penalty of lesser value than the reward that the crime provides?; and 3) is justice slow, inattentive, or ineffective, which allows the practitioner of a crime to get away unharmed? An effective legal system has to be fast, and active, to be of recognized utility to society.

The consolidation of this certainty is only acquired when the breach of a contract is deliberately avoided by the parties involved in the transaction. Today, conflicts proliferate in society because crime pays off. Way beyond the sheer good intentions that the parties engaged in an economic transaction might have, negative opportunistic behavior looms out by engaging deliberately in deceptive practices. It is with the care of translating people's intentions into durable support that it is possible to avoid differences in interpretation between what one party understood and what the other party wanted to say. However, excessive immersion in bureaucratic processes leads to loose sight of the main reason for the transaction to occur, and doubts regarding a contractual detail may be used to defraud the other party's expectations. Often, the legal framework of the contract provides excuses for noncompliance.

An effective judicial system needs to know how to avoid deliberate deception. The Value Function shows that it is necessary that the inhibition of the breaching of a contract to be encouraged by society by considering, at least, twice the damage caused as the due compensation. The Value Function outlines that people seek risk behavior when the potential gain overcomes the perceived potential loss. Hence, the adoption of deceptive practices is actually spurred when the party that engages in deception is, at most, legally forced to comply with what has been previously agreed by contract. In such regulatory environment, an individual has the opportunity to score a gain every time he or she foresees the possibility of deceiving someone else while just being exposed to due compliance in case of being caught in flagrant offense. However, if the legal framework disposes that the entire reward got by getting by complying with what was agreed will be lost in case of non-compliance, then individual behavior will focus on self-control. The adoption of negative opportunistic behaviors becomes unlikely because it will provoke in the offended a feeling of justice that the Value Function demonstrates to be the minimum limit for the human being to consider himself compensated for the loss that was imposed on him and the aggressor to feel that he was, precisely, diminished by the illegitimate gains that he sought to obtain.

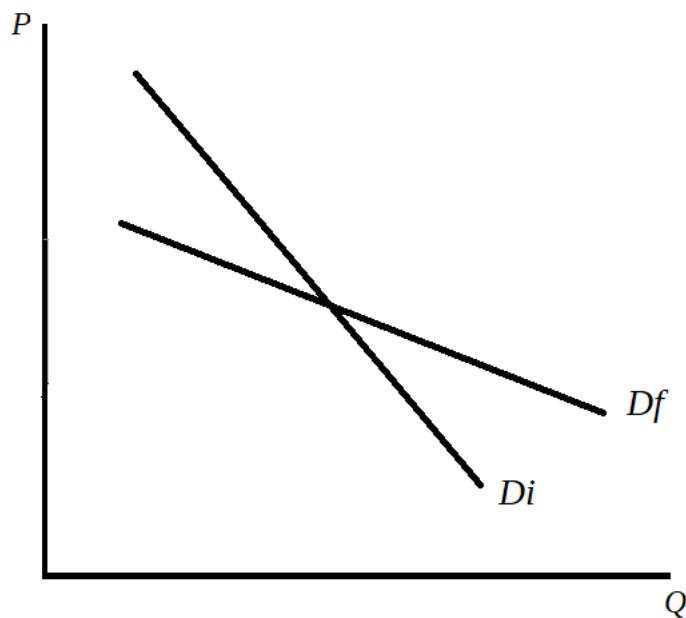
One might think that negative opportunistic behavior acquires a space for action under this proposal. Easily, our mind will be plagued by the idea that some people will try to take advantage of others, claiming any breach of contract, just to obtain a gain. In this case, we will be facing a litigant in bad faith who, if proven, will also have to compensate for double the damages that he caused with his fraudulent action. Given our immense human creativity and our bounded rationality, society cannot do without the presence of an effective judicial system. The advantages of a virtuous judicial system are not limited to the inhibition of negative opportunistic behaviors, but, above all, extend to the additional stimulation of positive opportunistic behaviors. If the gain obtained by performing a contractual breach is legally forced to be reimbursed at least in double to the defrauded party, society will reach again a regulatory environment where the control of human opportunistic behavior can rest at the individual level.

These are microeconomics effects that extend into macroeconomics dynamics. The adoption of an institutional environment under the dominance of a benefit-based regulatory system will lead to gains in efficiency and welfare that are not well understood yet. We proceed with the assumption that the “rules of how it must be” are going to be put in place.

The first effect of adopting “the rules of how it must be” encompasses several theoretical and practical effects related to building a world of optimum dimension firms. The persecution of the perfectly competitive economic environment starts with securing a full-employment economy. However, under a perfectly competitive environment, there is freedom to settle the price of any trade according to the control units’ will and, therefore, it is mandatory to explain the theory behind the process that leads to the definition of each firm’s dimension.

When firms are in imperfect competition, a small number of producers offer closely perfect substitute products at a given price, each enjoying abnormal profits. If we consider the set of firms as an industry, then the demand curve faced by the industry is necessarily less elastic than each firm’s demand curve. This is so because, with little changes in its product’s price, the individual firm might lose or attract many industry customers currently buying from the competition. Figure 27 illustrates the different possible positioning of the demand curves of both the firm (Df) and the industry (Di) where the curve Df is more elastic than the curve Di (assuming the simplification of replacing the notion of elasticity for the curves’ slope).

Figure 27.
Firm and industry demand curves

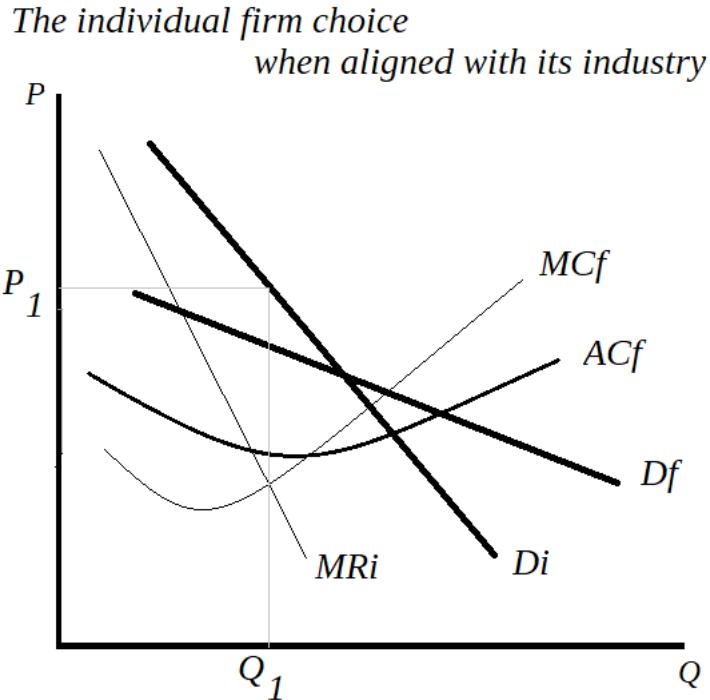


Source: Based on Sousa, A. (1988) “Análise económica”

In this market of imperfect competition, information is not perfect, and firms resort to several means to maximize profits, such as modifying the product characteristics (aiming at a monopolistic position) and modifying their product’s sell-price and/or resorting to advertising to capture competitors’ customers (Sousa, 1988, p. 254). This type of strategic behavior is followed by the competitors’ adjustment which leads society into a dynamic process of successive action-reaction.

We may consider a starting situation where each firm's chosen pair (Q, P) of the produced quantity and sell price is defined by following the industry's demand curve. In this instance, the individual firm will produce the quantity Q_1 and sell it at price P_1 , where Q_1 is the quantity at which the individual firm's marginal cost equals the marginal revenue. Figure 28 illustrates this starting point where the firm is completely aligned with its industry.

Figure 28.



Source: Based on Sousa, A. (1988) "Análise económica"

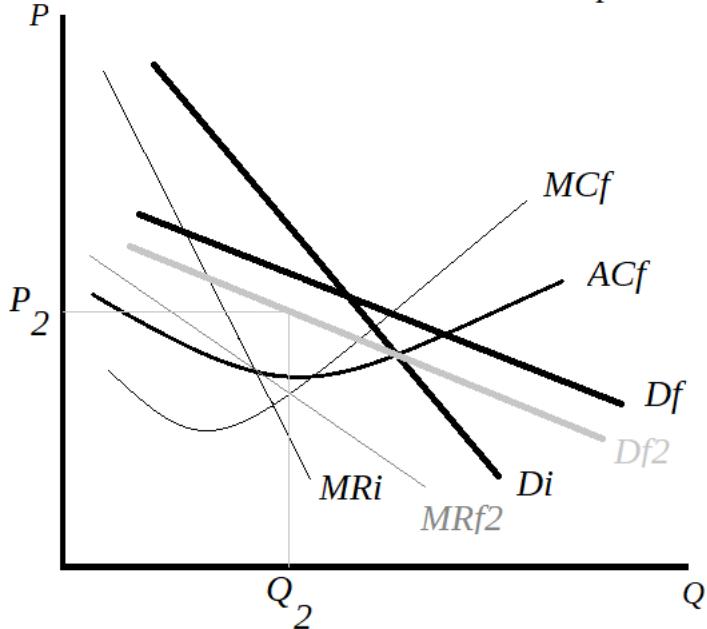
In Figure 28 the firm follows the industry's demand curve as a guideline and maximizes its profit where its marginal cost (MCf) equals its relevant marginal revenue (MRi) which, in this case, is given by the industry. Hence, the firm chooses to produce the quantity Q_1 and sell it in the market at price P_1 as the remaining competitors are doing too.

However, the individual firm believes that it can increase its market share by reducing its sell price and considering as relevant its demand curve. However, the money in circulation did not change, nor did the customers' budget. If the firm is considering selling a higher quantity at a lower price then it is the same thing as adjusting downward its demand curve. Now, the firm's chosen quantity-price pair (Q, P) will be at the point where the firm's marginal production cost, MCf , cuts its marginal revenue, $MRf2$, as illustrated in Figure 29. The firm chooses to produce the quantity Q_2 and sell it in the market at price P_2 .

But at price P_2 , the entire competition will likely adjust their prices too and sell higher quantities in the market, following the industry demand's curve. To the individual company, this is the same as forcing its demand curve to further move downward. This process of continuous adjustments of the individual firm of an industry ends when it does not have an incentive to proceed with a price-war strategy, i.e., when the competitors' reaction will push its demand curve to a point where the profit

collected by considering the industry's demand curve is higher than the one that is perceived as possible by following a further reduction in the individual firm's sell-price.

Figure 29. *The individual firm trying to overcome its direct competitors*

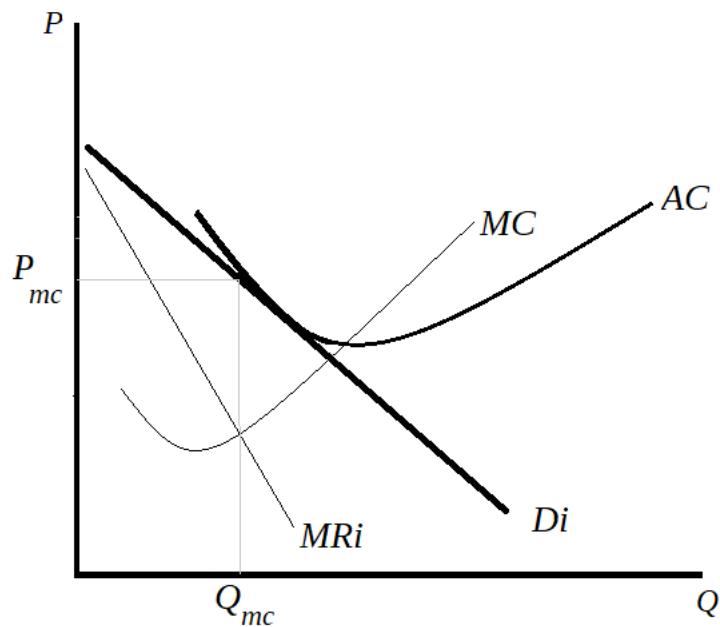


Source: Based on Sousa, A. (1988) "Análise económica"

The dynamics illustrated in Figures 28 and 29 outline how stable is income-inequality due to the producer's human behavior. Entrepreneurs are easily induced to abide by their industry's abnormal profit standards and often take their decision-making process by following the industry's demand curve. Accordingly, they keep consistently scoring abnormal profits over time. Under our current regulatory system, a skewed distribution toward the entrepreneur of the income produced in the economy occurs naturally.

In a free market, where opportunities are readily taken by the members of society, if the firms of a given industry are scoring abnormal profits then the entry of new firms will happen. This can only occur if every productive factor is allowed to adjust its quantity-price pairs according to market needs. In this case, since new market participants are entering the industry, the industry's relevant industry demand curve is continuously moving to the left, until no point of the industry's demand curve is above the average cost curve – otherwise it would be possible for a new firm to enter the market and sell its product at a lower price, pushing the industry's demand curve further to the left according to each firm's point of view. Figure 30 illustrates this situation where a sufficient number of new firms enter the market and try to capture the available value, i.e., proceeding with a profit maximization strategy of producing the quantity where their marginal cost equals their marginal revenue. This is often the case of monopolistic competition where the firms serve the same end market by offering differentiated products.

Figure 30. *Market equilibrium under monopolistic competition*



Source: Based on Sousa, A. (1988) "Análise económica"

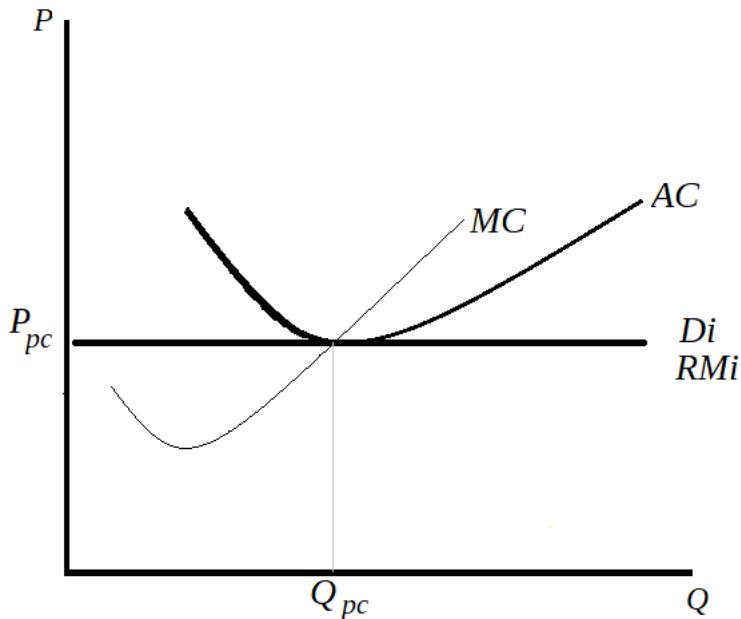
Under monopolistic competition, even when, in the long run, a sufficient number of new firms enter the market to bring the product price to its production average cost, the profit maximization process leads firms to produce less than what is possible with the existing technology. In this case, the dimension of each firm in the market is smaller than what is desirable in society. It is, therefore, clear that the usual situation under economies of imperfect competition is the existence of firms that are smaller than the optimum dimension, as illustrated in Figure 30, or are bigger than the optimum dimension, as shown in Figure 24 when enjoying monopoly positions.

However, under a perfectly competitive market, firms are of optimum dimension. Every firm is facing the same market prices of inputs and outputs, and each firm's cost structure is the same. Prices are given and marginal revenue equals average revenue. In this economic environment, there are no unused resources. Specifically, in the labor market, there is no involuntary unemployment, i.e., every person is employed for the level of wages that are being paid equals their average productivity in the firms and their average utility as consumers. If it was not so it would be possible to either hire another employee to grab a profit or accept a lower wage for the same unit of labor. The same thing happens in the markets of the remaining production factors, otherwise, it would be possible to adjust quantities and prices to score a profit. Figure 31 illustrates the firm's dimension in a perfectly competitive environment.

In Figure 31, the firm's cost structure is the same as the one considered in Figure 30. It is plain that compared with the situation of monopolistic competition, the individual firm's dimension increases under the perfectly competitive environment, while the product sell-price decreases and the output available increases. The optimum dimension of the firm can only be reached in a perfectly competitive environment. However, it cannot be reached unless society enacts a full-employment reality.

Figure 31.

Market equilibrium in perfect competition



Source: Based on Robinson, J. (1933) "The economics of imperfect competition"

The regular functioning of a free market where full employment is secured in society is a situation that, at first glance, frightens both laborers and producers. The fears raised concern both the possibility of losing gains and the room that will be given for negative opportunistic behavior to thrive. Hence, both are relevant and demand further inquiry.

One of the first fears that arise with the decree of a full-employment society is the fear of "laziness". We all know that there are good and bad workers. We also know that people act in a certain way because they want to, and because they can. Bad workers are only bad because they want to, and because they can. And it is with this current condition of a person being able to perform a function for which he has no talent or vocation, that society has to learn to deal with.

On the producers' side, another fear that arises in society when facing the possibility of enacting full employment concerns the irregularity of aggregate demand directed at firms' products. In 1992, the economists Christopher Carroll, Robert Hall, and Stephen Zeldes demonstrated that the consumer adjusts his consumption patterns depending on the uncertainty of his future income and his preference for consuming in the present. This behavior results in an irregularity in the demand for the products produced by firms, which occurs over time, and it is one that entrepreneurs cannot control. Consequently, if the economy operates under a regime of free competition and an open market, then firms will have to go through times when there is a need to reduce wages, fire people, or resort to both solutions.

The perception, on the part of entrepreneurs, of the combination of the heterogeneity of the workforce and the potential irregularity of the demand that is directed toward the firm's products, leads employers to have a very effective need to adjust the wages they pay and the number of employees they employ. And this faculty must be guaranteed to them. Therefore, with the safeguard of the full-employment society, it is necessary that people who are going to be fired from a

company, where they are being unproductive, are immediately integrated into another company, where they are needed.

On the workers' side, ensuring general freedom to fire, being a legal faculty that all firms must hold, stirs up the greatest fear of all workers: being unable to safeguard a source of stable income that allows them to face the future with peace of mind. However, when the full-employment society is enacted, all people see their need for survival guaranteed. The fact that an individual is fired from a firm does not affect his or her future, as he or she will immediately be integrated into another company where the person is more needed. Thus, what is truly at stake is not the survival of each human being, but rather the quality of life each person manages to get from their working condition.

The fact that society grants the employer the right to dismiss at will implies imposing on the worker the acceptance of the risk of not knowing in which firm the person might end up. And here comes another fear that society has to learn to deal with. Worker or employer, every human being likes to feel that he or she has conditions to work in the place he wants, with the people he or she wants.

To overcome these multiple fears, society must decide to play the economic game positively, and in a cooperative manner. Thus, we can create operating rules that make society reliable. This requires the creation of rules that encourage positive opportunistic behavior, both from employees and employers, and that are unanimously accepted by all, from the very beginning.

On the employer's side, there is a need to lower wages or lay off employees in two different circumstances: 1) when the demand for its product decreases and the company finds that it is overstaffed; and 2) when faced with a worker without a personal profile to perform that function. In the first case, the worker will be dismissed from the company, due to the termination of his job, and will join another company, hopefully, maintaining his current remuneration. In the second case, so that the negative opportunistic behavior can be continuously inhibited while encouraging positive opportunistic behavior, the worker will enter the second company with a salary lowered "x %" concerning his current one. Salary is the worker's reward and the decrease in reward acts as an inhibitor of possible negative opportunistic behavior on the part of the worker who decides to adopt a "lazy" attitude.

On the worker's side, the implementation of a full-employment society gives the employee greater power to change employer whenever he or she sees fit. It is intended that a person be free to resign whenever being mistreated by their employer. If so, the employer who mistreats his employees ends up having to pay more to have someone working for him or, sooner or later, reverses his way of acting toward employees. Providing the worker with the ability to say goodbye whenever he wants, without fear of having a loss of income, results in a direct incentive for the development of positive opportunistic behavior on the part of the employer.

The full-employment society cannot be successful if it does not grant the freedom of employers and employees to fire and resign, respectively. At the same time, both must be free to carry out salary renegotiations whenever they consider required. With these measures, society takes firm steps toward becoming free, reliable, and respectful.

To be successful, society has to create an organization that carries out the relocation of people expeditiously and functionally. And this is not an easy task. On the one hand, it is necessary to agree on a set of rules, unanimously accepted by the people, that will allow the relocation of workers. On the other hand, in light of the rule of reducing "x %" of the wage for the bad employee who is dismissed, it is necessary to create a database that allows society to check these values. For these

goals to be achieved, it is necessary to create “Employment Centers” or “Employment Agencies” where employees and employers can announce their needs.

With this institutional framework, both the employer and the employee are better off. Given the existing technology, the employer becomes aware that he or she can reach optimal productivity and be even more efficient in managing his or her business unit. The employee, in turn, is encouraged to perform the function for which he or she has the most vocation and talent, instead of simply looking for a “pot”, that just enables him or her to have a stable income and that simply allows the person to consume at will without having to pay concerns about the contribution it makes to the remaining community. For the employee, having a well-paid job where performance is mediocre can no longer be a consistent situation over time. And the person quickly becomes aware of that fact. In addition, the same person is calmer because the comfort of their day-to-day life no longer depends on having to hold that job, doing things that the individual does not even like to do. The full-employment society that adopts this type of rule calms some of its members' fears: The fear of losing productivity and the fear of losing wages.

However, there are some additional problems to which the full-employment society still does not respond. These are: 1) how can people who have just lost their jobs be replaced?; 2) since society has to employ all people without work, how is the survival of employers safeguarded?; 3) after adopting the full-employment society, with firms' profits tending to zero, how will society proceed with the creation of new firms if the investment is compromised due to the lack of profits that can finance it?; and 4) given that it is up to employers to decide the selling price of their products, and they have just been granted the power to freely dismiss and renegotiate the remuneration of employees, what guarantees that workers' living conditions do not worsen when the society decrees the situation of full employment?

Once again, fear can trigger negative opportunistic behaviors in opposition to the creation of a full-employment society. The creation of reliable and unanimously accepted rules by society, upon which we can all freely evolve, requires the recognition of the general public that the legislator is focused on stimulating positive opportunistic behavior and inhibiting negative opportunistic behavior. In this context, each of the four doubts raised in the previous paragraph is pertinent to the analysis of the possibility of creating a full-employment society.

Achieving unanimous acceptance of criteria for the relocation of people who have lost their jobs is a difficult task for the legislator. First, employees will want to be the ones to choose where they want to go. And second, employers, to ensure good management of their business, want to keep wage expenses at the same level they had before having more employees joining their firms. Thus, the legislator must seek to respond to these two needs while remaining focused on promoting positive opportunistic behavior.

From the worker's point of view, when we enact a full-employment society, the employee knows that he can quit his or her job, go to the “Employment Center” (or “Employment Agency”), and start working immediately at another company. At the same time, the worker also knows that he can first look for another company and only quit his or her job when this new agreement is signed. In the first situation, it is the “Employment Center” (or “Employment Agency”) that best knows which firms are most in need of a person with the qualifications of each worker. So, it makes sense to be the “Employment Center” (or “Employment Agency”) placing the person. In the second case, the worker can seek work in the company that seems most attractive to him, without having to resort to any third-party support. It is concluded that the worker does not need to worry about the firm where the “Employment Center” (or “Employment Agency”) places him or her, since society endows him

or her with the power to continue looking for another job in case a choice is, eventually, inappropriate. Workers and society become aware that each individual will be, more and more, “the right person, in the right place, at the right time.”

The first question is thus solved.

In a full-employment society, the survival of employers can be questioned and requires a pertinent analysis. Given that society will live in full employment reality then, every time a person wants to create a new firm, the employer will be forced to remove employees from existing companies. To attract these people, the employer will have to increase their remuneration. Employers will thus be fully aware that their profit decreases. Additionally, every company with a business going on knows that to keep good employees, it will have to pay them a higher salary to dissuade the competition's harassment of its good workers. Thus, with the implementation of the full-employment society, employers know that there will be a reduction in profit at the expense of a general increase in wages.

But, contrary to what intuitive thinking dictates, profit is not an essential requirement for the existence of firms. Either when the company is made up of just one person, or when the company is made up of hundreds or thousands of people, the contribution that each firm makes to society is always confined to the set of goods and services it provides to others. If firms did not exist, society would not be able to have an enormous diversity of goods and services at its disposal. But profit is not essential for this to happen.

Profit is simply the difference between the selling price of goods and services produced by firms and their cost of production. Currently, this production cost involves all operational, extraordinary, financial, and tax costs that were necessary to make that production possible. Operating costs include all costs with merchandise, raw materials, external supplies and services, research and development expenses, amortization of fixed assets, and personnel costs. Finally, personnel costs include the employer's remuneration and the remuneration of employees. Thus, the entrepreneur's salary is not at stake when the full-employment society is decreed and his survival is, of course, guaranteed.

The second doubt is clarified.

However, the third question raises doubts about society's ability to engage in new ventures under a zero-profit reality induced by an institutional environment of full employment. This issue still needs special attention.

In today's economies, but more so in underdeveloped and developing ones, people are often dedicated to creating their jobs. The opening of small-capacity business units necessarily inhibits the productivity that these companies can achieve. In 2019, the OECD (Organization for Economic Co-operation and Development) published a report on entrepreneurship prospects for SMEs (Small and Medium Enterprises) in its 38 member countries, which bring together the most advanced economies in the world. The report states that two out of three people work for an SME. This report also points out that, in these 38 most developed economies in the world, and the period between 2002 and 2017, the vast majority of new job creation took place in sectors with below-average productivity. The report also underlines that SMEs are leading the growth in the number of jobs in OECD countries, but they need greater investments in terms of the qualifications of their workers, innovation, and technology to reach higher levels of productivity. In the present institutional environment of our global society, it is concluded that the levels of productivity and well-being that

we have managed to achieve fall short of what is possible to obtain due to a lack of appropriate funding.

The fourth question, in turn, casts doubt on the safety of workers who consider that their level of well-being is exposed to the feelings of the owners of the productive means because they control, simultaneously, the value of wages paid, the amounts of goods and services offered for sale, and the products' sell price. However, once full employment is decreed, with the conditions listed above, there will be freedom for wage renegotiation in conjunction with the fact that the products' price is always limited by the maximum value the consumer is willing to pay for them, given its budget allocation. As a result, entrepreneurs begin to act on the positive dynamics of the market. First, the wages of all workers will have significant upward pressure. Second, the products' sell-price will have a greater downward trend. This tendency will be more accentuated the greater the freedom the economy grants its members to create new firms and operate them in a regime of perfectly free competition. Both the first and second situations require a deeper analysis.

In the first case, workers' fears can be alleviated if society unanimously accepts a priority for relocating people to the most profitable firms, with the highest average salary, or where there are the greatest salary inequalities among workers. Whenever companies show exaggerated profits, based on negative opportunistic behavior close to a monopoly situation, society introduces a stimulus to their moderation through the preferential placement of unemployed people in these companies. In this case, we can have two negative emotional reactions from the owners of these companies and their employees. One, the amount earmarked for wages in the very profitable firm's budget can be divided by the new number of workers. In this assumption, all workers are initially dissatisfied with the fact that they are earning less. Two, the negative reaction on the part of the firm's owners is now because they realize having to increase the salaries paid, at least to guarantee the permanence of the best employees. The adoption of a priority of placing workers in the most profitable companies, by itself, constitutes a stimulus for the increase of the wages of the workers. Thus, the initial, instinctive, and emotional reaction of the firm's workers is not justified.

The priority placement of unemployed workers in companies with the highest average salary leads to people being placed first in the most productive sectors of the economy. The placement of unemployed people in companies that show greater wage inequalities will also constitute a stimulus for these inequalities to be mitigated. In 2023, in Portugal, the weekly newspaper "Expresso" reported that the salary of the Executive Director of the distribution company "Jerônimo Martins" was about 186 times higher than the average gross salary of the company's other employees. But the same newspaper also stressed that this is not an isolated case. Specifically, the Executive Director of "Sonae", another large distribution company, receives 82 times more than the average employee, and, on average, the Executive Directors of companies in the PSI index (Portuguese Stock Index), which aggregates the largest companies listed on Euronext Lisbon, earn 36 times more than the remaining workers. As shown above, the worker's productivity decreases more and more, the greater the part of his production that is expropriated. Hence, accepting the rules that ground the full-employment society constitutes a strong stimulus for adopting positive opportunistic behaviors and inhibiting negative opportunistic behaviors, that benefit everyone.

Finally, it should be noted that the efficiency of the full-employment society increases when people are more aware of which economic activities are better remunerated. Today, in Portugal, there is a shortage of welders, plumbers, electricians, carpenters, refrigeration technicians, and many other professions of a more manual and, allegedly, less intellectual nature. This situation is a consequence of a reversal of society's focus. In the first two-thirds of the 20th century, Portuguese society lived in an environment of low productivity, greatly conditioned by the absence of effective educational

and training processes. At that time, most individuals learned a profession from older people, and most workers were dedicated to manual professions. The average earnings of each person were low because society's output was low and was shared by the entire population. People with higher education were few and this situation led them to charge a lot for their services. With the creation of conditions that allowed a greater number of people to acquire higher academic training, all parents in general, guided by the desire to provide their children with the best possible living conditions, began to pressure young people to continue their academic studies while losing the notion about the value that other professional activities, of a more manual nature, have for society. Today, in Portugal, a welder, a refrigeration technician, or a heavy-duty car driver, all earn a monthly salary higher than most people who have taken a university course do. However, society has lost this notion due to a lack of adequate and timely disclosure of relevant information.

Nonetheless, the concerns raised by the third and fourth questions are still not perfectly controlled because entrepreneurs remain fearful about their future investment capacity and workers are not yet completely calm about the purchase price they will have to pay for the products they need to live. So that society can adequately respond to the fears raised there, these two questions refer us to the analysis of the financial system.

We can thus summarize the basic conditions necessary to implement the full-employment society: 1) guaranteeing employment to all people who request it; 2) providing total freedom for the renegotiation of wages, working hours, and working conditions, between employers and employees; 3) placing workers in companies or activity sectors that exhibit higher profits; 4) placing workers in firms and activity sectors that exhibit greater wage inequality; 5) placing workers in companies and activity sectors that have a higher average salary; and 6) making effective dissemination of this data so that the educational efforts of parents, and training of society in general, are directed to where they are most needed.

The doubts regarding society's capacity to generate new investments and workers' fears of worsening their social inequalities and living conditions are yet to be duly clarified. However, one of the functions of the financial system is precisely to meet the firms' financing needs. It is therefore important to understand the current functioning of the financial system before realizing which rules can be unanimously accepted by society to stimulate positive opportunistic behavior by all its members.

Bank revenues come from two sources: The supply of services and interest. The supply of banking services can be summarized into two types: supply of means of payment and custody of valuables. Banks supply customers with checks, ATM cards to be used in Automated Teller Machines, services for transferring funds between customer accounts, and other related services, facilitating the completion of commercial transactions in the economy. Additionally, banks provide safekeeping services, allowing people to trust their banks to retain part of their savings or belongings, knowing that, there, those goods are not damaged or lost. These revenues are usually called commissions. In turn, revenues inherent to credit operations are commonly known as interest. Although banks create money to extend credit to their customers, the money thus created is not accounted for as bank income. In the first phase, the money is given to the customer through the granting of consumer or investment credit. Thus, the money created by the financial system enters into circulation in the real economy by the hand of the debtor. When entering the economy, this additional money creates inflation. Since people have more money at their disposal and buy the products that are already produced, the prices of different goods and services rise across the economy. This inflation is also felt by the bank. When the customer returns the principal and interest, the principal is treated as if it were a refund.

Despite the appearance that commercial banks get hold of the outcome of the work of the remaining society members, the truth is that central banks are the ones who control the creation of money. In 2021, in Portugal, the annual report of the accounts of “Banco Montepio,” which is a commercial bank, reveals that, in this period and average terms, credit granted to customers decreased by around 122 million euros, while resources coming from central banks increased by more than 1 billion euros. “Banco Montepio” increased its funds with a view to future credit operations. This means that the income inherent to the interest that banks charge on credit operations is, in most cases, simply an intermediation commission that corresponds to the difference between the interest they charge on credit operations to their customers and the interest they pay, both to central banks, for the funds made available, and to their customers' savings, for portfolio deposits. This intermediation commission is usually called the financial margin.

The functioning of the financial system is quite simple and acceptable when central banks are owned by the state and operated under the purview of the government. However, there are countries in the world where the central bank is privately owned and managed autonomously. Both central banks and commercial banks play a decisive role in society by providing the necessary financing so that firms and individuals can acquire the most diverse products and services. However, the action of these financial system entities is also conditioned by the fears they have regarding negative opportunistic behavior on the part of the private sector of the economy.

Because the financial system recognizes the existence of an information asymmetry between the true potential debtor's financial strength and what is sensed by the bank, banks fear that reality is worse than perception and, therefore, tend to condition the credit operations to the provision of collateral by their customers. Banks seek to protect themselves from either the bad faith of businessmen and consumers or their incompetence in assessing their customers' financial situation. Accordingly, they aim at ensuring a penalty mechanism for the debtor in the event of non-compliance. Guided by fear, banks seek to protect themselves from the negative opportunistic behavior of other members of society, as we have seen in Chapter 7.

Notwithstanding the above-identified problems, the financial system plays an important role in the prior assessment of the good, or bad, prospects for success that an investment project exhibits. Often, by saying “no” to a loan application, the bank is helping society to avoid wasting resources on that specific undertaking. By saying “no” to a credit request, the bank is preventing the proliferation of inflation. But this decision must be based solely on the assessment that the bank makes of the business potential that is presented to it and cannot be previously conditioned by the existence of goods that can be given in the guarantee of the fulfillment of the agreement with the bank.

Interestingly, if society implements the situation of full employment, the financial system's legitimate fears regarding debtors' repayment capacity are completely quelled. First, the bank is certain that the debtor will always have, in the future, the financial means to reimburse the sums received. Second, banks can completely dispense with any type of real guarantee, enabling a greater number of credit operations than those they approve right now.

These stimuli to positive opportunistic behavior calm doubts regarding society's ability to make new investments and maintain workers' living conditions. Yet, in a full-employment society, banks can fire all employees they consider surplus. Also, banks are free to charge their customers as high as possible for the services they render to society. Concerning the relocation of employees and employers' motivation, the rules defined in the first move ensure a tendency to encourage balance in economic activity and respect for all people.

However, corporate profits continue to tend toward zero and workers are not sure of having access to credit when they intend to create new companies. The abolition of the use of collateral is a necessary step for the financial system to make a greater contribution to raising the levels of well-being in society. It is a measure that consolidates the implementation of the full-employment society, signaling to the population that there is a collective effort in the sense of raising the levels of well-being of all, without exception. Eradicating the use of real guarantees in credit operations is not enough to ensure that economic activity does not spur social inequality or that the living conditions of the entire population are assured.

Economics explains that an important factor in safeguarding the population's well-being lies in society's ability to control inflation. We easily perceive that the creation of money for granting credit to citizens is a way of immediately providing purchasing power to people who will restore this purchasing capacity in the future. The granting of credit comes from two different sources: 1) it comes from customers' savings deposited in credit institutions; or 2) it may originate from lines of credit made available by central banks to commercial banks.

When we are dealing with the granting of consumer credit, and the operation comes from customers' savings deposited in the bank, then we are facing a situation in which there is a temporary exchange between two consumers. Using the bank as an intermediary, the depositor client lends his savings, in the present, to a person who now needs that purchasing power and is willing to return that amount in the future. The bank provides an intermediary service for which it charges a fee. This operation does not generate inflation because one individual's consumption corresponds to another's savings, and this situation will be symmetrical in the future. The money available in circulation in society never changes.

When the granting of consumer credit comes from the creation of new money, there is an increase in money in circulation throughout the economy. This situation causes a general price increase and "almost all" people's lives worse. "Almost all" because employers get better. The increase in the amount of money in circulation will mean that, immediately, firms can increase their selling prices, while all consumers will have to pay a higher price to acquire the goods and services they need. Given that wages do not immediately adjust upward, and the firms' products are already produced, the creation of new money to be used in the granting of consumer credit encourages a transfer of money from workers' wages to firms that, in this way, increase their profits. Currently, social inequality is based on the creation of money for the granting of consumer credit.

The increase in the perception of the existence of social inequalities between employees and employers has the same result as the expropriation of part of the worker's production. And the economy has already shown that productivity decreases when this happens. Consequently, despite society's limited awareness of this fact, creating money to grant consumer credit is negative opportunistic behavior. Each bank gets worse off the greater the number of banks resorting to the creation of new money to grant consumer credit.

The possibility of creating new money to grant consumer credit also means that commercial banks do not need to earn customer savings above the amount at which central banks make lines of credit available to them. Thus, if central banks create money out of thin air and lend money to commercial banks at zero cost, being satisfied with the return of the capital, commercial banks also do not need to pay anything to their customers for their deposited savings. Consequently, abolishing the possibility of creating new money for the concession of consumer credit brings yet another benefit to workers: They immediately ensure a higher return on their savings.

It is, therefore, concluded that the abolition of collateral in credit operations allows society to acquire greater control over the levels of inflation and distribution of purchasing power that its citizens have to deal with. But, the two doubts raised above, regarding the guarantee of living conditions for the entire population and the capacity of firms to make new ventures, although more tenuous, still keep a dangerous small flame burning.

Society's ability to use money is a very important piece to guarantee the well-being of populations. Likewise, as economic activity develops, society's capacity to create more money also allows it to stimulate positive opportunistic behavior by economic agents. In the first moment, banks stimulate a particular sector of economic activity when they create lines of credit dedicated to that sector. If credit is aimed at the consumer, then producers feel the increase of the aggregate demand directed toward them. And this allows firms to increase their products' sell-price and, consequently, their profits as well. If the market is free, increased profits will stimulate increased investment in the market, which in turn fosters increased competition and leads to more goods available to society at lower prices. On the other hand, if credit is aimed at investors, then banks will increase new investments by firms in that sector of economic activity. This results in increased competition in the market, which leads to an increase in the available goods at lower prices. At first, whether through consumer credit or investment credit, people's positive opportunistic behavior is stimulated when banks create money. All people live better the greater the number of actions of this nature that occur in society.

However, in a second moment, under the current rules of the financial system's operation, the money created by the banks has to be returned, plus interest. Therefore, in this second moment, the banks will withdraw money from the economy. Now, in response to the diminishing purchasing power of aggregate demand, producers are forced to reduce their production, reduce their staff, reduce wages paid, raise selling prices, or combine all these measures to maintain the same profit margins. The whole society is forced to live worse. If the credit is initially intended for consumption, this money is withdrawn from consumers. In the initial phase, producers are the ones who profit the most from the practice of creating new money for the concession of consumer credit. In the final stage, consumers are the ones who pay. Society exacerbates social inequalities by creating money dedicated to consumer credit. Conversely, when the money created by the banks is dedicated to firms' investment, it is the producers who will return to the bank the capital they received in the first moment, plus interest. But this return concerns the profits obtained from the sale of products that were successful in the market. No harmful action results for society when the credit granted to the investment is successful, nor does it result in any stimulus to the negative opportunistic behavior of anyone.

We thus have two desirable situations: 1) that the creation of money is devoted exclusively to the granting of credit for investment; and 2) that this investment is successful. However, if the investment credit is granted for a ruinous business, which is not accepted by the market, then, in the future, banks will demand the return of an amount of capital and interest that the entrepreneur cannot comply with. Consequently, the entrepreneur is forced to reduce his usual consumption pattern to return something to the bank. In this context, the aggregate demand directed at firms decreases and society is provided with a stimulus for generalized negative opportunistic behavior. It is, therefore, concluded that the success of investments made by entrepreneurs is essential for the creation of money by banks to be virtuous for society.

We realize today on the importance of controlling how money is created in society. As time goes by, only the creation of money for lending to investment projects can be consistently virtuous for society. The importance of creating money to raise society's levels of well-being directly depends

on the ability of entrepreneurs to create value for all through the development of new businesses. Only then can society effectively, and consistently, control the stimulus for positive opportunistic behavior by all people.

Commercial banking reaps immense benefits from the adoption of this measure by the financial system. But, this conclusion is not intuitive. At first glance, it appears that society is limiting banks' current freedom to create money as they see fit. Intuitively, this situation suggests a worsening situation for the banks, as it seems that they are no longer able to take advantage of profit opportunities in consumer credit operations. But, a more rational analysis allows us to conclude that consumer credit operations are not inhibited. They are only limited to being carried out by banks using people's savings. Furthermore, new money creation by banks is always an inflation-generating act. Inflation works as a tax for society as a whole. However, it is a tax that is always felt more by the banks than by the remaining population because the money created in moment zero provides purchasing power to producers or consumers, but not to the bank. While the former can already increase their investment or consumption power by receiving an increase in their purchasing power through the credit granted to them, banks, for their part, only improve their situation later on, when the capital and interest are returned to them by creditors. By defining the exclusivity of creating money for granting investment credit, banks will ensure that they live consistently better.

When we combine the abolition of the use of collateral in credit operations, with the impediment to the creation of new money to finance consumption, while guaranteeing the possibility of creating money exclusively to finance investment credit operations, we reach an extremely advantageous situation for commercial banking, but which also underlines the tremendous importance of central banks' role for society to ensure economic prosperity. Once again, this is not an intuitive situation, both for ordinary citizens and for the banks involved in the financial system.

Specifically, the current functioning of the financial system defines an extremely tight regulatory environment, which commercial banking has to comply with due to the guidelines issued by central banks. These guidelines, in the aspects that directly impact the granting of credit, respect the credit limits that banks are authorized to grant, respect the level of real guarantees that the granting of these credits must exhibit, and respect the cost that the money just created by central banks has for commercial banks. When central banks allocate lines of credit to commercial banks, they are obliged to return to the central bank the new money that has just been created, plus the interest that the central bank defines. Before the central bank, the commercial bank is, in every way, similar to an entrepreneur who needs to be successful in his business to be able to return to his creditor the purchasing power attributed to him through the granting of credit. In this context, commercial banks owe obedience to central banks.

Commercial banks are important suppliers of financial intermediation services operating at two levels. There is a level of intervention through which commercial banking performs intertemporal financial intermediation, lending, in the present, people's savings, which will be returned to their depositors in the future. In this case, the bank retains an intermediation commission for providing the service. There is another level of intervention in which the commercial bank lends, in the present, the money created by the central bank and which it will have to return in the future, plus interest. In this context, commercial banking is, once again, providing a financial intermediation service, which happens to be between the money created by the central bank and the debtor. Consequently, if commercial banking intervenes in financial activity only as an effective intermediary between the parties involved, the financial system can reach levels of efficiency as high as the competence of central banks in deciding on credit operations. As long as the creation of new money is confined to the central bank and the commercial bank acts only as an intermediary

and not as a debtor, then, in a full-employment economy, no commercial bank is in real danger of failure.

In addition to financial intermediation activity with the central bank, currently, commercial banking also creates new money by granting credit from a proportion of the customer deposits it has in its portfolio. If the commercial bank is only authorized by the central bank to create money for the granting of investment credit, then we verify that the commercial bank only runs the effective risk of bankruptcy when the investment project that benefited from the credit operation is unsuccessful.

The central bank has only two responsibilities: 1) to control the inflation levels of the economy by controlling the creation of new money, and 2) to ensure the credibility of the financial system. If the financial system combines the three measures – the abolition of the use of collateral in credit operations, the impediment to the creation of new money to finance consumption, and the reserve of the ability to create money solely to finance investment credit operations – then the central bank acquires conditions to guarantee that the control of inflation levels does not depend on the use of the interest rate for that purpose. In other words, and contrary to what happens today, society will be sure that the financial system will stimulate positive opportunistic behavior.

Of the many contributions that Economics has made to social development, the studies focused on measures to control inflation and its effects on populations stand out. In 2019, professors and economists Fernando Alvarez, Martín Beraja, Martín González-Rozada, and Pablo Andrés Neumeyer showed that the frequency of price increases and decreases is similar when inflation levels are low. That is, economics has shown that inflation levels only stimulate human negative opportunistic behavior when inflation exceeds a given threshold. The authors focused their study on empirical data disclosed by the economies of Argentina, the Eurozone, Poland, Mexico, Brazil, the United States, Israel, and Norway. They concluded that, in general, the negative effects of inflation only begin to be felt when it exceeds 5% per year.

Today, society knows that the creation of money by banks is beneficial to economic development whenever it is dedicated to granting investment credit while the investments are successful. We also know that banks encourage negative opportunistic behavior by economic agents whenever they withdraw money from the economy. Additionally, during the entire period that a company is a creditor of the financial system, the bank is a partner of the investor, since it also holds part of the capital that finances the company's assets. The central bank can allow the financial system to create money at will for lending to investment as long as inflation levels remain below a given threshold value. The central bank can also prevent money creation when this level of inflation is threatened. Finally, the central bank must ensure that withdrawing money from the economy never happens.

Cumulatively, the financial system can guarantee that the bank does not withdraw money from the economy if the participation in the firm's capital acquires a more lasting character. When banks participate in the capital of firms as creditors, they are remunerated with capital and interest during the term of the loan. If this participation acquires a relatively unlimited character in time, the bank starts to sign an initial agreement, at the time of granting credit, which is focused on the quality of the firm's business and never on the objective of appropriating collateral. The bank's permanence in the firm's capital will constitute an important source of remuneration for the bank that will remain over time. Banks become partners with firms for a longer period. In this context, bank failure is no longer possible. On the one hand, the commercial bank acts only as a financial intermediary. Therefore, each bank is an important service provider that can be replaced by another without any negative consequences for society. On the other hand, the bankruptcy of firms will never entail the loss of savings for any citizen. The disappearance of a firm, or a commercial bank, will become just

a natural consequence of its lesser value to society. The central bank can then acquire full control over the contribution made by the financial system to encourage positive opportunistic behavior by economic agents.

But the success of the financial system depends a lot on the success of the investments made by entrepreneurs and, even though the investments may be a failure, society still needs to guarantee its stability, as well as the persistence of entrepreneurs in their attempts at innovation. In light of the above exposition, it remains plain that our global society needs to rely on technological resources to disclose information regarding profit levels, wages, price levels, and the allocation regarding the creation of new money. This requires a focus on the benefit targeted by society and is almost in full opposition to the General Data Protection Regulation that is in place in Europe, which inhibits the disclosure of information and is mainly focused on precluding negative opportunistic behavior while fostering it simultaneously. It is impossible to take advantage of the available opportunities if the relevant information for the decision-making process is deliberately hidden from society.

The implementation of a benefit-based regulatory system has a significant impact on the development of Artificial Intelligence (AI). First, it becomes clear that Information and Technology (IT) products are nothing else but a tool assisting the human decision-making process. Second, it is plain that the quality of the information that is disclosed is second to none when the individual resorts to technology-seeking value-taking opportunities. Hence, it is diminishing the logic of following “leads” allegedly smartly provided by AI tools to make a lot more sense the focus on readily recording information while disclosing it on time. The use of the technology will be put at the assistance of the entire society, under a win-win relationship toward every society member, rather than favoring the immediate individual interest of a producer who seeks nothing else than immediate profit, under a win-lose mindset.

The above-mentioned institutional environment has severe macroeconomic effects. Society becomes more reliable after full employment is enacted based on the rules identified above. The homeless cease to exist and society can finally take care of itself. The full-employment society entails a set of advantages that only our bounded rationality prevents us from readily putting them into practice. The weaknesses that are reflected by society's exposure to its deepest fears also require the adoption of institutional rules, unanimously accepted. These institutional rules, which are necessary, extend beyond the implementation of the full-employment society.

It is possible to eradicate poverty and foster economic equality, without leaving anyone worse off. However, as shown in Chapter 4, that requires pursuing a long-run view, which is severely blurred by our human-bounded rationality. We often opt for competition instead of cooperation, and the consolidation of win-lose relationships has been the norm over the centuries. The irony is that the perfectly competitive market, we are supposed to be moving to, represents a society engaged in full cooperation. Yet, the future engagement of our global society in a cooperative mode is the ultimate challenge that has to be overcome.

The methodological development and adjustment of rules and regulations can always be performed according to the four steps herein outlined. These are: 1) identifying the goal to be reached (i.e., knowing what kind of value is society trying to capture by choosing to abide by a given regulatory system); 2) identifying the type of regulatory system that is being used to reach the goal; 3) identifying the full range of resources that are required to enforce the regulatory system; and 4) identifying the type of opportunistic behavior that is returned by the regulatory system. It is, therefore, important to understand what might change over time.

First, the goal that is targeted by a given regulatory system might become obsolete and/or inappropriate due to changes in the available circumstances. For instance, it might no longer make sense to force a person to walk on the right side of the road when no car traffic is going to happen there. Circumstances change and, in accordance, the disparate regulatory systems require monitoring.

Second, we know that a benefit-based system is superior to a penalty-based system whenever a given regulatory system requires similar technology to be effective. However, often, the benefit-based system demands a higher level of information that needs to be delivered on time to be of assistance. If the technology is not sufficiently developed to disclose useful information, then a penalty-based system must be in place. Therefore, technological development is, itself, a source of regulatory adjustments for it might be possible to increase society's global efficiency when technological improvements allow it.

Third, the continuous monitoring of the resources that are being used to assist in the implementation of a given regulatory system cannot be left loose. Systems that require hierarchical structures to avoid negative opportunistic behavior are always more expensive than systems that enable autonomy and performance. However, the hierarchic structure might be socially justifiable if it is still more productive than the alternative. Often, the organization forgets about controlling the adequacy of what is doing, and simply keeps going on doing things and following the rules because "things have always been this way."

Fourth, the identification of the type of opportunistic behavior that the regulatory system is delivering provides the final step. Negative opportunistic behavior only happens under two motives: 1) the regulatory system is not unanimously accepted; and 2) the target of the regulatory system is not fully aware of the benefits (or gains) that might be missed due to non-compliance. Either way, the regulatory system requires assistance from the legislator.

It is not possible to raise a proper regulatory system without being fully aware of how humans seek value. The understanding of the scope and effect of the Value Function for the human decision-making process is paramount. It is only by realizing on what can be wrong with the contribution of a given regulatory system to reach its goal that the organization might be able to tweak it according to needs.

One of the main difficulties faced by our global society is the creation of a regulatory system that allows people to be free to negotiate the terms of their transactions while maintaining even negotiating power. On one side, we need people to be free to take advantage of the available opportunities. On the other side, we need to make it perceptually useless the attempt to make gains through the existence of inequalities in negotiating power. And, herein, the perception of being useless to engage in negative opportunistic behavior is fundamental.

We are fully aware that a perfectly competitive environment, where people's freedom leads society to find the general balance in the economic markets, is the same as a society that lives in total cooperative mode. However, as shown in Chapter 4, this implies that we deliberately choose to cooperate rather than compete with each other. And, this demands an awareness that we are giving up a small short-run gain in exchange for future compensation. Gregory T. Gundlach, Ravi S. Achrol, and John T. Mentzer (1995, p. 78), addressing the structure of commitment in exchange, assert that "*commitment implies a willingness to make short-term sacrifices to realize longer-term benefits.*" The regulatory framework to properly channel opportunistic behavior into a positive

mode extends far beyond the comprehensiveness of any country's parliament and reaches every human interaction where a transaction takes place.

Respect and commitment cannot be consolidated in society unless people embrace empathy in their daily lives. Henry Hansmann poses that “*when you are on both sides of a transaction, you can always trust the other party*” (1999, p. 390) and that is exactly what is at stake. Empathy is the capacity that a human being has to understand another person’s feelings. It is the ability to take the other side. A producer cannot identify a consumer’s need without the development of this capacity. It is in our ability to serve each other, to understand each other, and to trade each other’s skills, that economic development consolidates. Ultimately, human productivity is the outcome of properly combining an individual’s respect and commitment at the service of a team effort. And we cannot be doing it successfully unless we consciously decide to engage in cooperative mode.

This reality intertwines Economics and Sociology into a tight hug that cannot be loosened. It is not possible to expect that several human beings decide to engage in free cooperation without expecting to score a gain. Particularly, George John (1984, p. 278) noted that the different types of existing power (such as reward, coercive, legitimate, referent, and expert) define how much authority is exerted over the individual and poses that “*structural variation is viewed as the consequence of the human tendency to behave opportunistically whenever one can profit from such behavior and is not prevented from doing so.*” Hence, economic performance cannot be disconnected from considerations about power exercise. This poses the concept of commitment at the forefront of institutional improvement.

Until now, human society has evolved based on a large mix of win-lose relationships that combine with win-win partnerships developed to overcome someone’s disproportional power. This legal and mentally dangerous setup spurs the focus on building individual empires. Ultimately, it fosters violence. Moreover, this setup depends on the global institutional environment we abide by. It is, therefore, required to consolidate win-win relationships and eradicate win-lose situations where each attempt to play this game necessarily carts someone’s pain.

Herein, it is shown in detail how individual behavior depends upon the degrees of freedom and negotiating power provided by the available circumstances. And the relevant circumstances for the decision-making process cannot be dissociated from what can, and cannot, be done. The regulatory system upon which our global society chooses to abide makes a huge difference. Consolidating peace on Earth is, therefore, within our reach.

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10- How and why violence consolidates

Peace cannot prevail unless we understand why we tend to be violent. Often, emotional actions lead to weaknesses in the human decision-making process and emotional reactions can boost the chaos. Although the chain reaction of cause-consequence events sparked by fear or greedy attitudes might lead to a war, this emotional outcome is always tried to be justified by a rationale before humans engage in the ultimate process of destruction. Why do we insist? The question is, therefore, under inquiry.

Contemporary economics usually addresses human behavior by detailing individual choices and putting individual circumstances in the background. In this realm, it is possible to identify problematic behaviors such as principle-agent relationship, moral hazard, adverse selection, and social loafing, and to advocate measures to solve the consequences of such deeds, while forgetting that it might be possible to intervene in the causes (circumstances) behind such behaviors. Rational measures are intended to solve emotional-based dramas grounded on asymmetric information. Hence, often at a higher cost, the economist is, sometimes, trying to condition the choice while neglecting that the problem lies in a misunderstood emotional fact.

According to António Damásio (1999) and Andrew W. Lo (2011), fear and greed are two of the most powerful emotions that condition the behavior of every human being. Greed stimulates people to grab available opportunities. Fear alerts for the possible negative consequences of a given course of action. Fear and greed establish the unbreakable risk-reward bond. Accordingly, the emotional state of every member of society affects the way choices are made, and, therefore, it also defines how society deals with the available opportunities. Further, either inadequate fear or uncontrolled greed fosters mistaken decisions. Economic behavior directly depends on society's emotional state.

By realizing that emotional states condition human actions, we can put forth that a given regulatory framework, designed by a human being, is driven by his or her greed and fear. The opportunity to rule society is a propitious circumstance for the ruler. Hence, we must accept that its outcome to society can be of both positive and negative economic nature. Moreover, as mentioned above, the ruler might not be aware of the final negative effect on overall welfare due to the new institutional framework he or she is about to create. So, permanently, mankind needs to supervise the chosen institutional framework to avoid jeopardizing welfare.

In this vein, any formal or informal set of rules that condition human behavior is an institutional framework. The notions of "right" and "duty" are herein exacerbated and the idea of "freedom" starts to find its boundaries. Realizing that every opportunity depends on the available circumstances, it is noteworthy that a methodological study of the relationship between human responses and the enacted institutional environment is paramount.

Analyzing human behavior under a given set of circumstances to maximize expected utilities (payoffs) is required to conclude how effective any measure designed to improve overall welfare. Executive power is one variable impacting how humans take advantage of opportunities. Research shows that human behavior, in general, and economic efficiency, in particular, depend upon a given organizational context. Hence, a deeper inquiry into the human responses to a given set of stimuli is mandatory.

A very interesting exercise was produced by the riddle known as "The pirates and their booty" (available at <https://www.popularmechanics.com/science/math/a25367/riddle-of-the-week-17/>).

This exercise allows for concluding the effects of uneven executive power on humans' decision-making process.

The riddle is as follows:

Problem: "The pirates and their booty."

Context: Five pirates got a booty of 100 gold coins which must be divided among them.

Institutional rules:

- 1) The oldest among them proposes a way to divide the riches.
- 2) Afterward, all pirates vote on the proposal.
- 3) The loot is divided as proposed if the proposal gets polling 50% or higher.
- 4) If the proposal is rejected the pirate who made it is killed.
- 5) The next oldest pirate is then asked to make a proposal, and the evaluation process repeats.

Beliefs:

- 1) Pirates care only about their lives and their money.
- 2) All else equal, they rather kill than making an agreement, for they do not trust each other.
- 3) All pirates are highly logical and consider every possibility.

Challenge:

If you were the oldest pirate, what would be your proposal?

This is a strategic game under perfect information, where all pirates know exactly how the remaining opponents are analyzing the problem. Hence, the outcome of any poll can be accurately foreseen by any pirate before making a proposal. Figure 32 displays the possible approved distributional proposal and the optimal distribution according to the executive power held by the oldest pirate. The "x" signals a dead pirate. Pirates are labeled from "A" to "E", where "A" is the oldest pirate and "E" is the youngest one.

Given the institutional environment faced by the pirates, each oldest pirate can get favorable suffrage in many possible proposals. One solution available for the oldest pirate is trying to save his life by proposing a distribution of 50 coins to two other pirates and none to the remaining. This proposal will get 60% voting, as shown from possibilities 'vi' to 'viii' in Figure 32. Another possible solution would be to decide to evenly split the loot among the five pirates. This proposal would get 80% support, being rejected by pirate "B" only. Note that possibility 'v' is better for pirates "C," "D," and "E" than the alternative of having pirate "A" dead, for they are aware that pirate "B" would be getting almost the entire loot in that instance. Therefore, pirate "B," because he is next on the rank holding executive power, is the only one rejecting an even distribution of the coins.

All pirates are reasoning considering the possibility of killing each other. They know exactly who will be making a proposal at each round and how that proposal will be voted. They know they are all highly logical thinkers and, therefore, they can anticipate their outcome according to how distant they are from holding executive power. Optimal solutions are presented from 'i' to 'iv.' Hence, the solution that maximizes pirate "A"'s immediate return, and that will be approved in the voting, is 98 coins to "A" and one single coin to both pirates "C" and "E." Note that pirates "C" and "E" know that they end up better than with the option of killing pirate "A", so they will support the proposal made by the oldest pirate.

This riddle enables several interesting conclusions and a subtle reflection. First, being all else equal, having executive power is a crucial variable impacting human behavior. Second, the person holding

executive power is conscious that he or she has a range of opportunities unavailable to the remaining society. Third, under a given institutional framework, it is expected that every society member will act similarly once holding the executive power.

Figure 32.

Possible proposals for loot distribution

Optimal Distribution					Poll					Result	
	A	B	C	D	E	A	B	C	D	E	Approved
i	x	x	x	100	0	x	x	x	1	0	50,00%
ii	x	x	99	0	1	x	x	1	0	1	66,67%
iii	x	99	0	1	0	x	1	0	1	0	50,00%
iv	98	0	1	0	1	1	0	1	0	1	60,00%
Possible Distribution											
v	20	20	20	20	20	1	0	1	1	1	80,00%
vi	0	0	50	50	0	1	0	1	1	0	60,00%
vii	0	0	50	0	50	1	0	1	0	1	60,00%
viii	0	0	0	50	50	1	0	0	1	1	60,00%

Source: Author's own creation based on popularmechanics.com.

The subtle reflection enabled by the above exercise is that humans are not highly logical. The average person cannot figure out the optimal solution without a deep analysis of the problem. However, human behavior tends toward the optimal solution. After understanding the mechanics behind the reasoning that provides the highest outcome, the decision-maker pursues the optimal solution every time a similar opportunity is detected. People learn how to think.

Thinking about the possibility of changing the institutional rules faced by the pirates provides important clues on how to foster positive opportunistic behavior from bloodthirsty persons who seek selfish goals only. Figure 33 depicts some possible institutional rules leading to a less severe concentration of riches on just one small fraction of society. The pirates' context, beliefs, and goals are the same as initially considered. Only institutional rules change.

The scenarios presented in Figure 33 emphasize the important effects on human behavior coming from holding executive power. These effects regard both the decision-making process and the design of institutional rules to provide specific payoffs to society. Scenario 1 shows that when executive power is widespread by more than one society member, the distribution of payoffs tends to be wider. Scenario 2 evidences that when the members of a society are called to vote on a wide number of propositions, they hardly reach polling of 50%. People do not tend to reach an understanding when they are all equally free to present a proposal and then submit it to universal suffrage. Scenario 3, presents a situation where all society members, despite being highly bloodthirsty and logical people, unanimously present the same proposal which they all, selfishly, consider to be the best for themselves. In this instance, each pirate is allowed to submit a proposal while expecting that his or her proposal is going to be lucky. If a pirate chooses to put a distribution such as "100 coins to the number one picker and none to the remaining" he or she is well aware that this proposal has only a 20% chance of success. Hence, the expected value of the proposal is 20 coins. However, in this case, and with an 80% chance, he or she risks being killed if someone picks such a proposal. The only way to grab the same payoff of 20 coins without risking their lives is by

suggesting a fair division of the loot. The design of the institutional rules people choose to abide by has a very strong economic effect.

Figure 33.

Institutional rules for improving pirates' overall welfare

Scenario 1: i) The two oldest pirates make a proposal each and at once.

ii) The proposals are subject to suffrage.

iii) If both proposals are rejected then the two oldest pirates are killed.

Proposed Distribution					Poll					Result	
	A	B	C	D	E	A	B	C	D	E	Approved
C	x	x	49	50	1	x	x	1	1	0	66,67%
D	x	x	50	49	1	x	x	1	1	0	66,67%
A	49	49	0	0	2	1	1	0	0	1	60,00%
B	49	49	0	0	2	1	1	0	0	1	60,00%

Scenario 2: i) All pirates make a proposal to society.

ii) The proposals are presented to all and then submitted to suffrage.

iii) The proposal with the highest polling is chosen.

Proposed Distribution					Poll					Result	
	A	B	C	D	E	A	B	C	D	E	
A	20	20	20	20	20	1	0	0	0	0	20,00%
B	32	34	34	0	0	0	1	0	0	0	20,00%
C	49	0	49	0	2	1	0	1	0	0	40,00%
D	0	0	49	50	1	0	0	1	1	0	40,00%
E	0	35	35	0	30	0	1	0	0	1	40,00%

Scenario 3: i) All pirates make a proposal to society.

ii) The proposals are then randomly chosen under a fair lottery, each pirate picking one proposal.

iii) The pirate with the highest amount of coins is allowed to kill one of the others while getting his or her share.

Proposed Distribution					Poll					Result	
	1	2	3	4	5	A	B	C	D	E	
A	20	20	20	20	20	1	1	1	1	1	100,00%
B	20	20	20	20	20	1	1	1	1	1	100,00%
C	20	20	20	20	20	1	1	1	1	1	100,00%
D	20	20	20	20	20	1	1	1	1	1	100,00%
E	20	20	20	20	20	1	1	1	1	1	100,00%

Source: Author's own creation

This economic effect is easily perceived because it directly impacts the dimension of the available market. For instance, considering a loot distribution such as {A=98, B=0, C=1, D=0, E=1}, the market available for someone who studies the possibility of opening a bar on the pirates' beach is significantly smaller than the market available where the booty distribution is more like {A=20, B=20, C=20, D=20, E=20}. The former investment is severely less promisor than the latter. The literature extensively outlines the importance of aggregate demand in conditioning entrepreneurship success, making the distribution of payoffs a foremost economic concern.

It is, therefore, possible to think about a different set of rules that may lead to the healthiest optimal welfare among the pirates' society. Herein, within the presented scenario, it is plain that the

institutional rules accepted by the pirates' society foster negative opportunistic behavior. All pirates want to hold executive power to get at least 98% of the loot while leaving the remaining portion of the society doomed to either die or barely survive. As we have seen before, this situation is not sustainable in the long run if further interactions are to happen in the pirates' society. It is likely that pirates "B," "C," "D," and "E" will never engage in another plunder with pirate "A," for their efforts were not duly rewarded in this instance. Undoubtedly, executive power and payoffs constrain human behavior and the former always depends on the regulatory system society accepts to abide by.

We can inquire about the expected human behavior of these pirates' society in the near future.

We are aware that pirate 'A' was holding executive power and, according to the current institutional rules of the island, he or she has decided to divide the 100 gold coins in a way that maximizes his or her immediate gain; i.e., {A=98, B=0, C=1, D=0, E=1}. But life goes on, and the institutional rules society abides by are still holding. Therefore, pirate 'B' is now the next oldest pirate, and he or she is the one entitled to hold executive power if pirate 'A' gets killed. Hence, pirate 'B' might entice pirates 'C', 'D,' and 'E' to engage in new plunder against pirate 'A', aiming at killing him or her and getting the 98 gold coins. Recalling that all pirates are highly logical and bloodthirsty, we know that pirate 'A' is surely aware of this danger. However, the gold coins' exclusive utility is to be used to buy bottles of rum. And there is no one producing them on the pirates' island...

Let us consider that the five pirates decided to split the island between themselves according to the coin distribution. Moreover, consider that pirate 'A' decides to start producing some rum while being aware that pirates 'B' to 'E' are in the neighborhood. Now, pirate 'A' faces a similar problem as the one posed by equation (23) – i.e., the problem of being expropriated from a portion of his or her production becomes effective. Pirate 'A' is quite aware that the remaining pirates cannot produce rum as he or she can, and the probability of being robbed is high. Hence, pirate 'A' must consider many variables: the expropriation probability, τ ; his or her work efforts, e_e ; the productive capacity of the land, A ; the possibility of hiring some of the pirates available to either provide security as guard workers (which means acquiring control over the amount of τ) or improve production using some of the other pirates as regular employees – which means to seriously consider the value of the work of other pirates, i.e. $\sum \beta B e_w^{1/2}$, to improve his or her welfare. Pirate 'A' is now aware that he or she can improve his or her well-being by sharing work efforts with the remaining community because

$$U_e = (1-\tau)(A e_e^{1/2} + \sum \beta B e_w^{1/2}) > U_e = (1-\tau)A e_e^{1/2} \text{ and} \quad (34)$$

$$U_e = (1-\tau)(A e_e^{1/2} + \sum \beta B e_w^{1/2}) > U_e = (1-\tau-\gamma)(A e_e^{1/2} + \sum \beta B e_w^{1/2}), \quad (35)$$

where e_w stands for the work efforts of every pirate working for pirate 'A'. Pirate "A" is well aware that his or her well-being increases if every other pirate is employed while providing a portion of their work efforts to him or her.

Yet, given that the oldest pirate is still the one who decides how loot is split, pirate 'B' is analyzing the possibility of killing pirate 'A' and becoming the master of the pirates' island. So, rather than accepting the pirate's 'A' job proposal, pirate 'B' is analyzing the possibility of becoming the island owner. Pirate 'B' is now facing a problem similar to the one posed by equation (23). Yet, given that this pirate is a highly logical person, then he or she is well aware that the problem is exactly how to figure out the situation where he or she ends up better off while considering exploiting other pirates' work efforts. The indifference point for pirate 'B' is given by

$$(1 - \beta)B = (1-\tau)(Ae_e^{1/2} + \sum \beta Be_w^{1/2}) \quad (36)$$

where e_w , in this case, stands for the work efforts of pirates ‘C’, ‘D’, and ‘E’ working for pirate ‘B.’ That is, pirate ‘B’ is concerned about comparing the welfare got when accepting to work for pirate ‘A’ with the level of well-being reached when choosing to kill pirate ‘A’ and take control of the island. This explains why humans engage in war endeavors while hoping to end it and become enjoying endless bottles of rum...

Domination, rather than competition, and a short-term mindset push mankind to consider violence as an answer to overcome individual difficulties.

11- Discussion

Can we change who we are?

Research has provided evidence that the human decision-making process is homogeneous. We all are value-seeking individuals prone to accept a small loss in exchange for a bigger gain or to accept a small loss to avoid a potentially huge one. The things we value most differ from person to person, but the reasoning process is the same for everyone. Whenever an opportunity is detected, in the sense that a given course of action over the available circumstances seems to improve individual welfare, the person will likely go for it. The likelihood is higher if the situation presents an immediate gain potential and the human being disregards reasoning about possible future losses that the action might trigger. Despite our different capacities to make optimal decisions facing a given circumstance, the way we all intertwine our evaluation of gains and losses in our reasoning process is homogeneous.

This human characteristic enables the use of creativity to improve overall living conditions. We are creative living beings whose inner nature cannot be changed. The first premise of this work is to find the foundations of the regulatory systems that understand and accept who we are.

The goal of any regulatory system is to improve the legislator's living conditions. In a well-developed organization, where all members are included in the collective decision-making process, the legislator considers his or her self-interest hand-in-hand with that of the remaining members of society. Otherwise, a conflictual organization is being raised and social harmony is necessarily in peril. The solidity of a regulatory system is measured by its capacity to reach collective goals without leaving anyone behind. We leap into the domain of "what can we do" but we cannot forget who we are.

Raising a regulatory system among human societies is natural, for those who reach the organization's leadership have the opportunity to improve self-welfare at once. The leader's creativity will be put at the service of this individual purpose. Good leaders consider improving overall welfare and are focused on collective interests. Good leaders understand that they cannot consistently improve their welfare overtime at the expense of other society members. A society cannot thrive under leaders who think of nothing else but self-interests.

This human social propensity leads us to try to improve self-welfare by cooperating. But, when society leaders disregard overall points of view, circles of power become decisive in producing a given outcome. The link between political ties and economic performance stands out. Witold Henisz (2000, p. 3) poses that "*institutional environments in which economic returns can easily be secured through political channels lead individuals to reallocate resources from economic to political activity.*" This is who we are.

Who we are is the basis of economic analysis, for it defines how human behavior evolves before a given circumstance. In human society, rules are not always appropriate to the circumstance nor do individuals always follow the rules even when they are adequate to ensure overall welfare. There is a forever-going-on dialogue between who we are and the social rules leaders decide to enact to improve self well-being and, desirably, overall welfare. An increasing awareness of who we are needs to be tightly connected with a higher understanding of what we do. And, as the pirates' riddle stands out, the regulatory environment plays a decisive role in defining the conditions for social harmony.

Can we change what we do?

In nature, both graphite and diamond are entirely made out of carbon. However, graphite is very soft, formed of flexible sheets, and exhibits a black opaque color. Diamond, in turn, is the hardest known natural substance, and it shines a lot when polished. These two natural substances differ in how their carbon atoms are arranged in space. In the graphite case, the individual carbon atoms link up in weakly bonded sheets, that can easily slide past each other. That is why graphite is used to build pencils. In the diamond case, each carbon atom is strongly bonded to four adjacent carbon atoms located at the apices of a three-sided pyramid. Strong bonds in all directions are established, and the strength of the liaisons provides the diamond with the greatest hardness known in nature.

Like carbon, we cannot change who we are but, we can change how we link to each other.

The literature has shown that humans are boundedly rational living beings whose brains cannot process the whole amount of available information in their decision-making process. However, just like in the pirates' riddle, we try to get close to the optimal solution but, unlike the highly logical pirates, we are not always so rational and we have to learn how to think when matters get more complex.

The thinking process developed throughout this work is straightforward. After understanding what "value" is to every human being and why it is sought, I inquired about the determinants of the decision-making process and how it leads to a given course of action. I have assumed that something is valuable if it enables an individual to reach a goal of self-welfare improvement. In this instance, following prior research, I have identified that human satisfaction improves when consuming and enjoying leisure time. Hence, in general terms, I have concluded that we write $U(c, l)$ to express the utility a person feels by consuming goods and enjoying leisure time doing whatever he or she likes to do. This framework encompasses both, the situation where a person is deploying work efforts to be able to consume and the case when a person dedicates his or her time to pleasure activities that even might provide a regular income. Under these assumptions, work efforts are considered to be developed to enable a person to acquire the consumption ability to survive, captured by $U(c)$, and $U(l)$ expresses the time spent on leisure activities, meaning doing what the person likes. For instance, the former can express the domestic work a person does only to survive and the latter might be related to the work of a musician who loves music so much that he or she considers enjoying leisure time at all times. To someone who loves to do domestic stuff, the activity might be felt as a leisure opportunity. Whether $U(c, l)$ translates into a monetary remuneration or not, the equation always expresses human satisfaction.

Because humans get physically exhausted at a given time after continuously performing the same activity, I follow the common research assumption that human productivity is diminishing to scale. Hence the production function $Ae^{1/2}$, first mentioned on page 99, where A is an endowment of productive capacity (like a piece of land) and e is the notation for work efforts, captures this assumption. By inquiring about the optimal level of work efforts that a human being might commit when trying to capture value, Timothy John Besley and Maitreesh Ghatak (2000) have proved that there is a dependent relationship between human work efforts and the utility level returned. Following this token, it remained clear that safeguarding property rights is key to inducing higher levels of human work efforts. Proceeding in the same vein, it also became plain why resorting to governmental fiscal policies of income redistribution is counter-productive to secure overall welfare. In this work, that is the first moment where the reader gets a formal sense of how a regulatory framework affects the human decision-making process with an economic impact.

Before that moment though, this work provides a crucial insight into the two different kinds of regulatory systems that we can use in society: 1) one, exclusively focused on society's behavior that the legislator wants to force; and 2) another, firstly focused on the benefit that a given behavior brings to society. The former expresses itself by applying a random penalty chosen by the legislator on society members who dare to defy the law. The latter distinguishes by applying a penalty that is exclusively exerted on the reduction of the benefit that the offender member might get from the existence of that specific law. These differences are huge regarding their power to channel human society to thrive. Their disparate effects are easily illustrated by the nonsense related to the regular practice of the worldwide insurance industry. Nonetheless, for those who prefer one regulatory system over the other, it is possible to conceive two different insurance contracts, each following the principles of the two methodologies. In the case of the insurance industry, in a free society, insurance firms will be enabled to provide a more expensive insurance contract where customers might consider fraudulent claims while, simultaneously, making available a cheaper insurance contract where customers are naturally induced to disregard the possibility of faking a claim from the moment they are buying their protection against unforeseen events. Acknowledging the differences between the two legal approaches is a cornerstone of Normative Economics.

The regulatory environment always conditions human behavior but only has economic effects when the buyer and seller's freedom is deterred. This notion is crucial for human society due to our bounded rationality. For instance, because of our general incapacity to duly think about the whole range of future consequences that our actions might trigger, humans easily engage in the overconsumption of the available natural resources up to a point that might lead to the extinction of some species of animals or plants. In 2021, Portugal was mentioned as the main world supplier of baby eels. One kilogram of baby eels corresponds to approximately 3,500 individuals and was reported to reach a value of 8,000 euros in the black market, being mostly appreciated in Spain, China, Laos, Vietnam, and Malaysia. These crimes against nature might endanger the species's survival, and, accordingly, severely compromise human society's ability to consume these goods in the future. In this work, the buyer and seller's necessary freedom is outlined as the two relevant economic units, because those entities (and no other) try to take advantage of the available opportunities. Thus, progress is built through the buyer-seller interaction.

In the baby-eel example, the interference of the regulatory system to safeguard society's overall interest is mandatory. Hence, in this case, the governmental institutions function as elements of economic stability that safeguard society's consistent capacity to maintain or thrive in its living conditions. However, when the government precludes buyers and sellers from performing economic agreements useful to society, it acts as an element of disturbance. The confusion that often succeeds, leads to huge bureaucratic processes and abuses of state power that impede economic development. Governments, rather than being an element of economic stability, often act as elements of disturbance, fostering unbalances in the regular functioning of society that seem to favor one fraction of society detrimentally to another. However, in this instance, every society member is a loser in the long run. Governments are crucial for the proper functioning and monitoring of our global society but are rarely competent in what they do regarding economic affairs. They impact the individual decision-making process while carrying macroeconomic consequences that they are usually unaware of.

At the individual level, because we are prone to act to capture a gain when we identify the opportunity to do it, the analysis evolved based on understanding how marginal and average values impact the human decision-making process. Firstly, we address what prior economic theory taught regarding the human decision-making process proclivities. In this domain, Positive Economics alerts that humans are boundedly rational living beings that do not make optimal decisions, all the

time. This critique must be accepted and embraced, for it is easily empirically proved. That led me to investigate how the human decision-making process evolves when a person is faced with the possibility of grabbing different payoffs. Understanding how different socio-economic rules contribute to changing the economic game we play becomes relevant.

However, we learn how to think, and, more often than not, there is an increasing behavior toward the so-called, rationally optimal. Hence, grounding part of our understanding on the highlights provided by past research enables us to dissect the details of some economic absurdities we are, sometimes, theoretically engaged in. Understanding the supply and demand behaviors under situations of monopoly and monopsony might lose sense in a society where negotiating power (the same thing as economic inequality) is distributed with no equity. Sources of centralized economies are still a reality. We are not living in a theoretical economic environment competitively perfect where no firm, no man, and no woman, can decide the market price. Empirically, we conclude that it is quite the opposite. We are living in a global society where involuntary unemployment subsists. This is where we are and we need to conclude if it is the best way to keep moving on.

Economic problems stem from our human ability to act upon the available resources. At this stage, it is important to realize that economic problems are always caused by a desire to improve our living conditions by manipulating our surroundings. Economic issues are man-made situations that escape from what nature is providing us and aim at going far further. Otherwise, we would accept living in the caves while wearing nothing else but the skins of the animals we managed to hunt. And this is not who we are. Hence, the economic process is not natural. Overall welfare depends on our increasing understanding of the manipulation of the environment to best serve humanity.

The regulatory system we accept is the starting point of the manipulative process. We use money to perform economic transactions. We use money to consume, to invest, and to save. Money has no other use at all. Hence, $M=C+I+S$ at all times. This tautology has not been duly addressed by past economic research, nor has the literature highlighted its implication when human society is trying to safeguard overall welfare. However, it is a fundamental stone of Normative Economics for it enables us to understand how the financial system contributes to economic instability.

Hitherto, it stands out that $M=PQ$, or that the amount of money in circulation, M , equals the weighted average price of products and services, P , times the quantity of goods and services produced in a given period, Q . This is a very important remark because it outlines that, if society keeps producing the same quantity of goods and services, then the consistent increase in their prices is exclusively due to the creation of new money.

The last sentence needs to be duly contextualized. Inflation is defined as a general increase in prices and a fall in the purchasing power of money. Under a free market, where resources are rationally used, prices evidence the scarcity of the good compared with the level of its need in society. If society holds a given amount of money to purchase a basket of goods and services, then the temporary scarcity of a good, which the producer compensates with an increase in its unitary sell price, cannot lead to a general price increase of the remaining goods and services. Only the creation of new money allows it. Nonetheless, social media persists in the absurd idea that the rise in the price of some goods can cause a general rise in the prices of the remaining or that the unions' claims for higher wages can lead producers to raise their product sell-price. Due to the existence of budgetary restrictions for the vast majority of citizens, that can only be true because of the continuous production of new money.

The fundamental equations herein disclosed enable an accurate evaluation of any economy regarding its balance and ability to safeguard overall welfare. It has been shown how and why Microeconomics and Macroeconomics depend so much on Normative Economics. Equation (9), by posing that $M=PQ$, or $Q=M/P$, evidences that real economic development only occurs when overall productivity increases. However, our global society is still allowing the artificial manipulation of the quantity of money in circulation, M , without controlling for the full fan of its effects. It has also been shown how and why the room for negative opportunistic behavior depends so much on the institutional environment that society accepts to abide by.

The absurd of accepting the justification of manipulating the money in circulation as an intent to control the prices of goods and services is a fallacy that economists have never stood up against properly. The foundations of our current monetary system enable the creation of new money to grant consumer credit against collateral. Accordingly, those who control the money supply are immediately entitled to take the value of the production of entrepreneurs and laborers. Additionally, those who control the money supply have the power to demand the pace at which they can grab the borrowers' income. The imbalances in economic activity caused by manipulating money lead to huge social pain. Our global monetary system is severely obsolete. It does not answer to human needs.

It is worth noticing that the financial system is required for a healthy society. The financial system provides crucial services to society. It provides the means of payment to facilitate transactions. It intermediates the match between those who want to save a portion of their present income with those who want to consume a little more in the present in exchange for a little less in the future. And it can allow the looming of start-ups whose entrepreneurs could not bring their new products to the global market otherwise. But none of these useful activities of the financial system is related to the withdrawal of money from the economy. This work stands for the financial system's contribution to grant overall welfare but outlines the urgency of many adjustments.

Humans are on a permanent quest to seek value. Hence, every person requires freedom to do it. Freedom to act upon the available opportunities. Humans are naturally prone to social activities and how we cooperate to reach collective goals separates us from the remaining animals on Earth. Economics makes sense only when society aims to improve every person's well-being by resorting to joint efforts. Otherwise, we would be just like any other animal on the planet.

The understanding of how to optimize joint efforts is quite meager yet. Currently, human joint efforts are developed through the efforts of firms, governments, international institutions, political parties, employer associations, financial associations, unions, sports clubs, and so on... This work addresses past research on the firm decision-making process to understand its virtues and its embarrassments regarding the provided contribution to overall welfare. Later on, the joint efforts of governments and financial system institutions are put into inquiry.

The analysis of the firm aims at identifying what is an optimal firm. The definition of an optimal firm is structured in such a way that a managerial decision cannot lead to a decrease in the production cost of their goods and services. That is, the firm's management is so good that the same levels of quantity and quality of the goods and services cannot be reached at a lower cost. This means that optimal firms are using the minimal possible amount of resources and energy to deliver the highest possible level of quantity and quality. Grounded on past theory, it is herein exposed why we are still living in an economy that exhibits simultaneously bigger than optimal and smaller than optimal firms, but not optimal firms. I have investigated to conclude if this human inefficiency is caused by the regulatory system we are abiding by.

This specific analysis of the firm's dimension is important because it is crucial to optimize the available resources. Following the assumption that firms face a U-shaped cost structure, facing scaling economies up to a given optimal produced quantity that minimizes the production cost that rises beyond that threshold level, it is easily identified that society can only minimize production average costs when living under a full-employment situation. Accordingly, when this is not the case, society wastes resources, and its cost is tremendous.

Still, one can raise the hypothesis that continuous scaling in production is possible and surely available due to the technological improvements mankind is so cleverly continuously reaching. But, if this is so, only one firm should be producing the entire amount of the good or service that society needs, for that is the only way of ensuring that the required quantity is produced at the lowest cost. Of course, that also requires that a full-employment society is in place. However, our global society is not securing a full employment reality, leading us to live far worse than it is easily possible, given our technological skills.

I followed the assumption that humans try to maximize their satisfaction by $\max U(c, l)$ while controlling the natural resources and the possibility of joining efforts. Moreover, I have assumed that every member of society depends on the entire income available and cannot survive otherwise. A regular development of the equations leads to the conclusion that a society maximizes its welfare when: 1) taxes, expropriation actions, and robberies are zero; 2) involuntary unemployment is zero; and 3) the income gains due to scale economies overcome the harmful effect of producing new money. It seems to me that these assumptions hold, and I could not find a way to consider them refutable. That is why I called them the equations of "how it must be" otherwise, mankind's efforts will continue to be inefficient in regards to aiming for higher levels of welfare and peace.

One insightful result is that the full-employment society that we need so much, which corresponds to the theoretical success of a perfectly competitive economy, must be ensured by the private sector. This counter-intuitive assertion triggers the fears of employers and employees who cannot easily understand how their well-being improves by splitting the current income with someone else. The process that leads to the improvement is, herein, outlined. First, the withdrawal of taxes from the economy must be zero. That means that governmental firms will act exactly as private firms, under the same rules, and can be started and foregone according to market needs, regardless of any need to consider an income distribution. That also means that the income distribution occurs naturally according to market requirements, free from human interference and producers will enjoy the highest possible aggregate demand for their products. Second, the financial system must stop using collateral in their credit operations. This measure contributes to precluding banks from producing economic cycles autonomously. Accordingly, the financial system will grant credit for every good business idea, for the banker will be a regular business partner of the private firm and the savings of the regular employee will be compensated according to market prices, free from human manipulation. And worries about potential credit failures will vanish. Only the enactment of a full-employment society enables this level of economic development and freedom and has nothing to do with a centralized economy.

Hitherto I have put together the knowledge disclosed by the studies of hundreds of economists and social researchers who, across the last three centuries, gave their contribution to increase mankind's knowledge on how to manipulate our environment to live better. However, I reached a stage where I consider it important to identify why we fail to step up. Besides our bounded rationality, what pushes us to resort to violence against other human beings?

This understanding will allow us to identify the best regulatory system that helps us all. It is impossible to explain how economic development is happening without fully understanding opportunistic behavior. Society's disparate stages of overall welfare result from how human interactions occur and resources are explored and exploited. The decision-making process is always directed to capture value but the goal to be reached is often missed. In our current global society, why we stubbornly keep on a cheating path is still not well understood.

I argue that mankind is collapsing because we are accepting to abide by a regulatory system that is inadequate to safeguard overall welfare and I have explained why. We live under a regulatory system that allows for the existence of involuntary unemployment. This reality exacerbates the fears of those who hold executive power (the same as negotiating power) regarding the possibility of ever diminishing their ability to subjugate others, for that feels like endangering the individual's survival. We also live under a regulatory environment that spurs focusing on self-interests and the short-run results. We live as if there is no tomorrow and what we have today is never enough. Despite this seeming a personal interpretation of mine, it is highlighted by applying the reasoning on how we seek value, $U(c, l)$, to the highly logical reasoning of bloodthirsty pirates who care about nothing else but themselves. We engage in violent acts against each other whenever that seems to be the logical thing to do. This behavior's roots, as outlined by the pirates' riddle, lie in the persistence of social inequality and in missing a focus on safeguarding overall welfare.

The evidence of what is stated above is clamorous. It substantiates, at least, in six behavioral areas: 1) persistence of astonishing inequality in negotiating power among economic agents; 2) persistence of disputes for positions of dominion over the available resources; 3) persistence of firms of non-optimal size; 4) persistence of little connection between different layers of society (hierarchical stratification); 5) persistence of uncontrolled creation of new money and 6) persistence of group cheating attitudes. Practical examples of these are overwhelming.

First, the persistent inequality of negotiating power is irrefutable. According to the magazine "Fortune," in 2022, the world's largest five hundred corporations, delivered a record-high aggregate revenues of USD 41 trillion. Something like USD 41,000,000,000,000. In 2022, the world's GDP was USD 101,3 trillion, meaning that 500 firms control 40.47% of the world's income. These numbers get higher significance if we compare the profit of one of these huge corporations with the GDP of many world countries.

In 2022, Allianz, the insurance company, reached an impressive EUR 152,7 billion total revenue equivalent to USD 163,8 billion at the currency exchange rate of 2022 Dec 31. In 2022, the firm reported a record operating profit of EUR 14.2 billion, equivalent to USD 15.23 billion. Allianz ranked 47th in the Global 500 list, operating worldwide, and employing 155,411 persons. In 2022, Allianz's total revenue was bigger than the GDP of more than 119 world countries (of 177 world countries). In 2022, Allianz negotiated worldwide a value that has overcome Morocco, Ethiopia, Slovakia, Ecuador, Oman, Dominican Republic, Kenya, Angola, Guatemala, Bulgaria, Luxembourg, Uzbekistan, Azerbaijan, Panama, Tanzania, Sri Lanka, Ghana, Belarus, Uruguay, Croatia, Lithuania, Côte D'Ivoire, Costa Rica, Serbia, Slovenia, Myanmar, Democratic Republic of Congo, Sudan, Jordan, Tunisia, Libya, Uganda, Bahrain, Cameroon, Bolivia, Paraguay, Latvia, Nepal, Estonia, El Salvador, Honduras, Papua New Guinea, Cambodia, Zambia, Cyprus, Trinidad and Tobago, Iceland, Senegal, Georgia, Bosnia and Herzegovina, Macao, Guinea, Gabon, Zimbabwe, Botswana, Haiti, Armenia, State of Palestine, Burkina Faso, Albania, Mali, Mozambique, Malta, Benin, Jamaica, Mongolia, Brunei, Laos, Nicaragua, Guyana, Madagascar, Congo, Moldova, Niger, North Macedonia, Rwanda, Malawi, Mauritius, Bahamas, Chad, Namibia, Equatorial Guinea, Kyrgyzstan, Tajikistan, Mauritania, Togo, Maldives, Montenegro, Barbados,

Fiji, Eswatini, Liberia, Sierra Leone, Suriname, Andorra, Timor-Leste, Burundi, Belize, Lesotho, Central African Republic, Cabo Verde, Gambia, Saint Lucia, Antigua and Barbuda, Guinea-Bissau, Solomon Islands, Seychelles, Grenada, Comoros, Vanuatu, Saint Kitts and Nevis, St. Vincent and Grenadines, Samoa, Dominica, Sao Tomé and Príncipe, Micronesia, Marshall Islands, Kiribati, and Tuvalu. And its operating profit alone overcomes the GDP of the latter 49 world countries. These 49 countries have 205,07 million inhabitants, whose work efforts were less valued than the operational profit Allianz has reached with 0.155 million employees.

To highlight the inequality that human society accepts regarding income distribution, I chose Allianz because of the strength of its brand worldwide. The 46 firms that have enjoyed total revenues higher than Allianz were, from 46th to 1st, as follows: JD.Com; Walgreens Boots Alliance; China Baowu Steel Group; Home Depot; Bank of China; Mitsubishi; China Life Insurance; China Railway Construction; Mercedes-Benz Group; Chevron; Cardinal Health; BP; China Railway Engineering Group; Microsoft; AT&T; Sinochem Holdings; Cigna; Stellantis; Agricultural Bank of China; Total Energies; Costco Wholesale; Ping An Insurance; Glencore; Industrial & Commercial Bank of China; Amerisource Bergen; Hon Hai Precision Industry; Trafigura Group; Samsung Electronics; Alphabet; McKesson; Shell; Berkshire Hathaway; Toyota Motor; Exxon Mobil; United Health Group; CVS Health; China State Construction Engineering; Volkswagen; Apple; Saudi Aramco; Sinopec Group; China National Petroleum; State Grid; Amazon.com; and, Walmart.

In the United States, in 1929, just before the beginning of the Great Depression, the control of 50% of industrial activity was in the hands of a mere 200 great corporations leading to an economic environment illustrated by Roger E. Backhouse as one of “cutthroat competition” (2014). We are now following a similar path but at a global scale.

Second, the struggles that fire worldwide to control the economies cut out economic agents' freedom. These impediments function as deterrents to the individual potential to grab the detected opportunities. The China-United States trade war developed in many terms and economic spaces and constitutes an example of the continuous pursuit of positions of dominion over a fraction of society and economic resources. Nationalism protectionism and retaliation practices emerge while political leaders claim to be speaking in defense of the highest interests of their beloved nation. In reality, they resort to brute force, such as setting tariffs and other trade barriers, to prevent regular economic activity from going on. However, as the pirates' riddle illustrates well, we will reach nothing good if the incapacity to properly evaluate economic affairs persists among the world governments.

Third, since a small number of global corporations take control of the world resources, and do it without caring about the eventual existence of involuntary unemployment elsewhere, the average citizen is abandoned to the possibility of creating his or her own business. According to a study disclosed by OECD Structural and Demographic Business Statistics considering the period between 2002 and 2017, new job creation in OECD countries is mostly in low-productivity sectors. In this regard, OECD SME and Entrepreneurship Outlook 2019 (p. 6) poses that “*SMEs are driving job growth, but need higher investment in skills, innovation, and tech to boost wages and productivity.*” Hence, instead of helping each other, and sharing knowledge, our global society cannot provide know-how, training, and resources to avoid a fraction of society from engaging in unproductive activities. As was theoretically outlined in previous Chapters, we live in a world of firms of non-optimal size. But we are doing nothing meaningful to change this state of affairs.

Fourth, referring to a weak connection between the different layers of our global society is the consequence of the first three points. I am unaware that someone representing Walmart, Stellantis,

or Berkshire Hathaway, only to mention some of the world's 50 biggest companies randomly, has ever reached the governments of the bottom-poor countries to offer assistance and know-how. These human organizations' apathy toward each other is similar at the individual level. There are millions of homeless worldwide which are largely ignored in every street of the world's biggest cities. Sadly, the majority of the people walking by a beggar believe that he or she is powerless to make a difference. And governments do not know what to do either. It is like we are living under a forced apathy toward the misery of others.

Fifth, a question is mandatory: Who controls the production of any cryptocurrency? We assist globally with the proliferation of the creation of new money without knowing who controls the supply of money. The average citizen does not understand where is the money coming from, nor who controls its supply, and has never cared about it for it demands to think over something of a higher complexity that the human brain naturally avoids.

And sixth, the persistence of group cheating attitudes consolidates as a matter of survival. I refer to group cheating attitudes as the acts of human organizations to deceive others to grab immediate gains. Examples of group cheating attitudes are massive globally and always carry a reduction in our global society's potential to thrive. The cheating process begins with the regulatory system that human organizations choose to enact and continues to spread into the entire economic activity.

This state of affairs is empirically verified. For instance, insurance companies adopt an internal rule system that rewards any claim-expert employee who manages to reduce the average claims cost of the processes where he or she assists. By this token, the quality of the service provided to the final customer decreases, and claim-expert employees try to avoid being of assistance in any accident whose cost is foreseen to be above the average. Hence, the insurance employee tends to resort to fake excuses to avoid dealing with these high-cost claim processes. Following a similar path, whether under a perfectly expressed regulatory system or just under a tacit one, there are firms deliberately producing consumer goods with a short shelf life and others are produced in a way that only their technicians can repair the product in case of future need. These are all examples of our global society sabotaging its welfare potential. It only seems to make sense because each of these bounded human beings is firstly emotionally considering immediate self-surviving needs.

This happens because we are reaching a stage of technological development where we can work a lot less and live a lot better, but we cannot find a way of distributing global income with equity. Accordingly, those who enjoy domination over the resources do not want to risk losing control.

In any economy, the production of goods and services is destined to be consumed by those who produce them. In a society that does not grant a full-employment economy, producers' survival depends on their ability to keep selling. Hence, regardless of having the potential to fully solve their market needs at a lower cost of production, firms try to safeguard their market by increasing consumption at a steady pace, faking the durability of their products to reach that goal. Mankind's safety is being compromised.

Under this state of affairs, I can only conclude that mankind is collapsing. We have reached a technological level of know-how that enables us to destroy the planet in the blink of an eye. Moreover, violence is growing worldwide, reaching every place on Earth. People do not sit together to talk about mutual needs. People gather to engage in collusion activities to overcome others. Political parties seem to do nothing else. Unions and Employer Associations follow the same behavioral line. Firm leaders speak internally to the organization as the interests of the firm and those of their customers are two different things. Selling is to be done no matter what for what is

imperative is growing the business in quantitative terms. Conversely, our governments are not developing efforts to communicate with each other constructively and the United Nations has been a flop in such desire. The construction of a society of all for all is a goal that is falling apart.

Mankind is collapsing because the majority of the people are pushed to act against their inner nature. Cheating and deceiving have become a form of survival, just like murder was a way of life in the time of piracy. Random acts of kindness here and there provide hope that not everything is lost, but that is not enough if we cannot agree on a set of rules that lead us to thrive and decide to embrace them.

The importance of the institutional environment has been outlined by past research but has never been put under a structured approach to identify the best practices. In this regard, I have to outline the words of John Maynard Keynes (1936, p. 332):

“(...) the ideas of economists and political philosophers, both when they are right and when they are wrong, are more powerful than is commonly understood. Indeed the world is ruled by little else. Practical men, who believe themselves to be quite exempt from any intellectual influences, are usually the slaves of some defunct economist. Madmen in authority, who hear voices in the air, are distilling their frenzy from some academic scribbler of a few years back. I am sure that the power of vested interests is vastly exaggerated compared with the gradual encroachment of ideas.”

12- Conclusion

Humans make two types of mistakes only. One, when we can act upon the available circumstances to improve our welfare, but do not do anything; i.e., we miss opportunities. Regardless of the deepest reasons behind this behavior, it is always a consequence of a lack of focus on the available circumstances. And two, we act intending to capture value but do not succeed in our endeavor, immediately or in a not too far future. The first type of error is often consecrated by organizations that deploy severe hierarchical structures, where the top-tenth signature that authorizes a given action does not contribute positively to anything, for it is just allowing what nine persons before him or her realized it was the correct thing to do. Hierarchical structures are nothing much else but sources of inertia. The second type of error happens when autonomy is provided and people act to capture value but do not choose the optimal course of action to reach the goal that is being targeted. This mistake is due to a lack of know-how and the required skills. This mistake must be accepted, controlled for its negative effect, and minimized as much as possible by safeguarding that ensuring “the right person for the right place” is how society naturally moves. Training, education, know-how disclosure, granting of individual freedom, and mutual assistance are the weapons that this society resorts to while seeking success. However, autonomy can only be provided by a regulatory system that fosters positive opportunistic behavior and inhibits negative opportunistic behavior, leading to healthy economic development. Controlling human mistakes has its hardships.

Normative Economics is one cornerstone for understanding economic development. The notion that society can engage in cooperative efforts to reach a desideratum of improving overall welfare is revealing what the future can bring. The link between Micro and Macroeconomics is established through the impact on the aggregate welfare of the disparate individual behaviors developed to capture value. However, as it is herein outlined, Macroeconomics depends on the sum of individual behaviors and Microeconomics depends on the macro rules faced by an individual before engaging in any decision-making process. Thus, by raising the regulatory system of the economic playfield where opportunities occur, Normative Economics acquires a huge significance for overall welfare due to grounding the scope for acceptable, or even possible, human behavior. And rules can be properly inferred by mathematical equations.

Some of these fundamental equations have been raised considering the individual interest of every society member, without leaving no one behind. By this token “must” rules had come up. “Must rules” is a term used in the sense that they are unanimously accepted by society once their effects are fully understood. These need to be opposed against “should” or “should not rules” for the latter are subjective and biased regulatory systems that cannot reach unanimity and acceptance in our global society. Hence, “should” or “should not” rules are irrelevant while “must” rules are crucial to safeguard overall welfare, albeit much more difficult to implement.

Overall welfare depends on society’s ability to produce and distribute output and leisure time, across all its members. These abilities depend on the regulatory system each human organization chooses to enact. At the microeconomic level, managerial practices become the focus of the analysis. Management can be defined as the practice of four sequential steps where each next step depends on the performance level of its predecessor. Specifically, management is about planning, organizing, directing, and motivating. Notice that it is not possible to exert an effective direction of anything if it is not previously well planned and the required resources to perform the actions are duly organized. When this does not happen, directors demand performance from their subordinates who will find no motivation to be engaged in their tasks. At the macroeconomic level, overall welfare is simply the outcome of the combined individual decision-making process. A world of nonsense is more customary than it should be if run rationally.

Normative Economics is, therefore, absolutely crucial for mankind to learn to stop building its misery. A society cannot live well when it cannot take care of all its members. A society cannot live well when people are pushed to do what they do not want. Because we have not learned to do better yet, we live in a society of frustration and agony.

Every human being is unique and exclusive because every person is the combination of a genetic inheritance and an aggregate of experiences accumulated, at least, since the first breath. Life is good only when it evolves on the consolidation of good memories. Life is a gift. And it is time for our global society to care for all its children.

In society, a person does not look for a plumber to fix a cataract in the eyes. Regardless of the patient, it is highly logical that an ophthalmologist be heard and seen to overcome such difficulty. Following a similar rationale, society is prone to hearing an economist for safeguarding overall welfare. However, while in the case of an eye problem, the patient realizes that he or she knows nothing about the best course of action to solve the problem, every economic solution presented by an economist is often contested by someone whose fears of losing negotiating power might be at stake. Hence, while it is the economists' responsibility to disclose the knowledge regarding the proper use of Normative Economics, ultimately, society must validate it.

Right now, mankind does not seek an economist to solve economic problems. Right now, we see firms holding annual profits higher than the GDP of dozens of world countries. Right now, we see homelessness and violence everywhere. Right now, mankind is collapsing. But, I am hoping that humans can become highly logical pirates who do not consider any more to take control of the island without ensuring a full-employment economy that grants them the highest production of rum that is possible to get while allowing them to enjoy leisure time, in peace.

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